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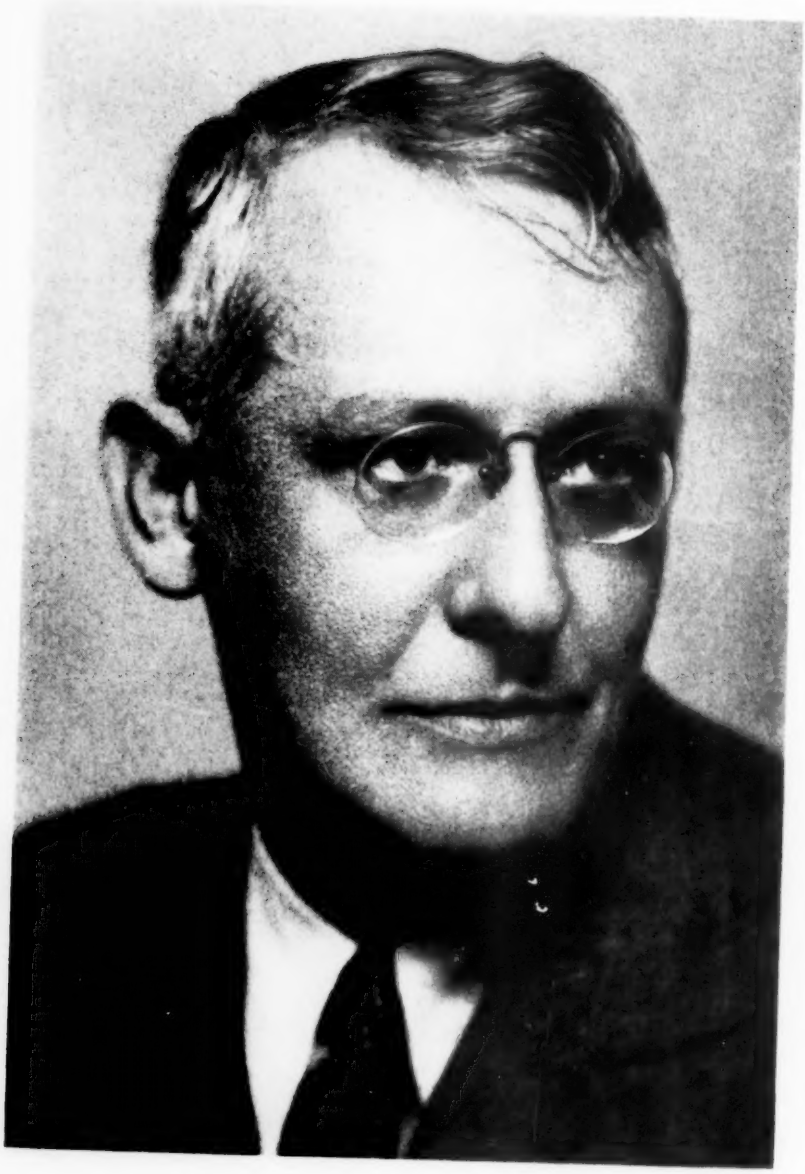

Edward A. Strecker

UNIV. OF MICH.

PRESIDENTIAL ADDRESS[1]

EDWARD A. STRECKER, M. D., PHILADELPHIA, PENNA.

My happiness and pride at having been given the highest honor this Association can confer upon a member are very great. Fortunately I am still able to hear the faint voice of my super-ego, admonishing me to a proper admixture of humility. I know there were others at least as deserving as I, who might have been chosen as your President. The coupling of two facts, that this Association celebrates its century birthday in this city and that I am a Philadelphian, perhaps in some measure contributed to my good fortune.

If I had any vanity, there would be an antidote for it in the contemplation of the psychiatric and personal statures of the 71 Past Presidents of this Association. In terms of what they accomplished for sound and enduring psychiatry they will live forever. I am glad to note that there are 14 living Ex-Presidents, since I hope to buttress my ego in the bond of their strength and courage.

REPORT ON THE STATE OF THE ASSOCIATION

The President of the United States has given an example to lesser presidents in reporting on the state of affairs. You will be pleased to learn that there is no danger of deprivation of membership vitamins—membership stands at 3,125, an annual gain for 1943 of 212 members. Of many accomplishments, at least two deserve honorable mention: 1. State, regional and city groups have become more closely linked with this parent association and will participate in its efforts through representatives authorized to deliberate with our Council. 2. In the face of many obstacles, the Editorial Board of "One Hundred Years of American Psychiatry" and of the Centenary number of the JOURNAL have performed tasks which will stand as a fine tribute to them and an enduring memorial to the Association.

The American Psychiatric Association has gone to war on land and sea; in the air and beneath the surface of the oceans; in sodden jungles, on burning desert sands and in arctic wastes; on the home front, in hospitals, clinics and medical schools. Eight hundred and thirty-one members are serving with the armed forces, 38 with Canadian troops; 627 in the Army and Army Air Forces; 156 in the Navy; 10 with the Merchant Marine. In addition, 21 members are in the United States Public Health Service; 127 in the Veterans Bureau. Practically every member not barred by age, disability or ear-marked as essential for civilian psychiatry is on active duty. In all branches of war service, the psychiatric policy and direction is overwhelmingly in the hands of members of this Association.

At this place, I ask you to pay the tribute of a minute's pause to the memory of Colonel Roy Halloran, formerly Psychiatrist-in-Chief in the office of the Surgeon-General of the Army, who gave his life for his country as unselfishly and as concretely as if he had been mortally wounded on the field of battle.

In a civilian capacity certain officers of this Association have been honored by invitations to serve in several important capacities; Consultants for the Secretary of War to the Surgeon-General of the Army; Consultant to the Surgeon-General of the Navy; Consultant to the Secretary of War for the Army Air Forces, and as members of the Secretary of War's Committee to study neuropsychiatric induction procedure and methods; of the President's Committee to study and revise the induction physical examination standards; and more recently on an overseas mission for the Commander-in-Chief with the Surgeon-General of the Army and the Air Surgeon.

PROBLEMS AND PROGRESS IN MILITARY PSYCHIATRY

Selective Service was sadly tardy in recognizing the significance of psychiatry and in benefiting by its application to its problems, but now one of our Fellows is serving effectively as Psychiatric Adviser to Selective Service.

[1] Delivered at the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 15-18, 1944.

In the Army, great progress has been made. The Surgeon-General has recognized the importance of psychiatry by making it a Division on a level with medicine and surgery. Divisional Psychiatrists, the backbone of military neuropsychiatry, have been appointed and are functioning.

The Surgeon-General of the Navy has been particularly attentive, sympathetic, and whole-heartedly cooperative toward neuropsychiatry and I believe the fruits of this attitude will be realized in terms of an excellent neuropsychiatric record.

In the Air Forces psychiatry has made steady progress and has contributed a brilliant chapter in the field of military psychiatry in the treatment of acute neuropsychiatric casualties by narcosynthesis and other methods.

Two serious problems are related to the dearth of available psychiatrists. One problem is the necessity for therapy to adapt itself to a more or less inflexible military framework constructed from the need for increasing manpower of combatant and not limited service calibre. There is dictated the need for therapies which give promise of returning a maximum number of men to duty within a minimum of time and with techniques which are feasible in the active theatres of combat.

The second problem may be described as a dilemma, one horn of which consists of a large, far too large, number of men, suffering from neuropsychiatric disorders and the tremendous amount of time which must be given to administrative work involved in their discharge from the Army. The other horn is made up of the need for the practice of psychiatry in its constructive branches; in therapy for recoverable disabilities; in prevention and in morale making. Every possible step which will reclaim a larger segment of the available time for these constructive psychiatric objectives is being taken, and a considerable number of medical officers are being converted into practical psychiatrists by intensive instruction.

The Committee on Nursing has not merely worked but has labored indefatigably in order to secure adequate recognition on a par with female nurses, for graduate male nurses in the Army, and deferment for student nurses in the few civilian training schools for male nurses. In spite of the fact that the Army could utilize the special skills of trained male nurses, particularly in the psychiatric and genito-urinary departments; that only a very small segment of man power, less than 1500 men annually is involved; that training schools for male nurses will have to close their doors unless relief is forthcoming; that there is an unfair penalizing of civilian psychiatry and finally that it would seem undemocratic not to accord the same recognition to male nurses that is accorded to female nurses, still the deadlock has not been broken.

It is scarcely conceivable that the Surgeon-General of the Army is not placed on the General Staff. The Surgeon-General presides over the health of the Army and therefore his rôle in producing military victory is significant, yet the line may, if it wishes, override medical judgment about medical matters. This Association should go on record as asking for a more satisfactory and wiser balance of military-medical authority.

On the home front, in our hospitals and teaching institutions, a handful of psychiatrists are laboring unremittingly, attempting to maintain some degree of adequacy of psychiatric service. They are tending the lamps of civilian psychiatry; utilizing with the utmost care the small supply of the oil of medical personnel for which they do not have priority.

All of us are in the line of battle. Only geographical distance separates the forces of psychiatry. We are all engaged in the same task of defending the ramparts of democracy. Our stake in the war is precious for the discipline of psychiatry can only live and flower within the framework of democracy.

Eventually, and God willing before much more time passes, the agony of this global war will cease. Then those of us, here and elsewhere who participated and suffered in the struggle in the front line of battle or in the supporting front at home, will prize all the more dearly the precious thing that men call democracy. We will hold it very tightly because once we held it too loosely and almost let it slip from our grasp. All the more watchfully and earnestly will we tend the lamps of freedom and keep them shining

brightly since we saw them well nigh extinguished by the hot breath of lustful dictatorships.

Psychiatric Lessons for Democracy

Has psychiatry any lessons to offer which will be helpful in promoting clearer understanding, keener appreciation and a more effective working of democracy? Has our century-long and painstaking scrutiny of individual patients given us a larger political, social and spiritual vision? We have looked long and searchingly into many human souls. Does not this faithfully served apprenticeship give us the capacity and the right to look into the sick and tortured soul of a world twice within a span of less than a quarter of a century saddened and ravished by the sinister passions of war?

Certainly, economic-financial devices have scarcely provided formulae successful in making democracy work. Some of the monetary solutions offered have been so fanciful that one is reminded of the statement that the higher divisions of mathematics are akin to poetry. Indeed, if some of the proffered plans had been proposed by mental patients only a few years ago, we, no doubt, would have labeled them grandiose delusions representing compensations for inner inadequacies, insecurities and inferiorities.

Furthermore, it is unlikely that democracy will fulfill its destiny by grace of technocracy alone, even though scientific technical achievement has been truly amazing. Man's conquest of his physical environment has made him easily supreme among animals, but it would seem as though his development has been dangerously one-sided, *too* physical, *too* materialistic, *too* lacking in philosophical and spiritual balances. Man may have created a Frankenstein, that already is beginning to regard him with somewhat cold calculation in the exact terms of his physical organism. Certainly we have observed in the last seven years how mathematically accurate and predictable techniques may be employed as readily for wanton destruction as for constructive purposes.

Man has made for himself a serious dilemma and there is some danger that democracy may be impaled on its horns. On the one hand there is the reality of a standardized and patterned environment; on the other the material largess of a technical civilization which nevertheless is quite exacting in the matter of demanding payment for its material benefits. Among other requirements, it insists on uniformity; conformity to too-extraverted activities; sometimes gruelling competition.

Of necessity, there is conflict between certain inarticulate, ill-defined and largely blocked yearnings resulting from the dissatisfactions of higher and comparatively recently acquired critical and ethical functions as they view the whole personality and the impelling drive of deep and primitive demands. Too often primitive demands released against pressure are translated into individual behavior which is socially taboo. Certain rigid social restrictions make condemnation by the super-ego all the more severe. All too often, the dilemma is pathologically resolved by sheer weight of numbers. Such poundage overwhelms social opposition even converting it into an ally. Then archaic weapons may be freely utilized. The net result is that cultural civilization is placed in jeopardy. When archaic tools succeed in leveling the unevenness, the discriminations and injustices of society, usually they also reduce society to a plane below its former level.

One may ask if we are not at a crossroads in the path of our civilization, when it would be well for us to emulate that tribe of Amazon river natives who, from time to time, interrupt their customary routine of activities and squat on the ground? Neither persuasion nor threat serves to move them until an allotted time has elapsed. They declare they are waiting for their "souls to catch up with their bodies." At any rate, unquestionably it is high time to draft the humane disciplines into the service of democracy, helping in its interpretation and assisting in its practical applications. And of all the humane disciplines psychiatry has had the longest experience and the closest contact with human beings.

Mental disease is the Great Leveler. It contains an immutable common denominator —the social common denominator. Mental disease amounts to notice served upon society

by the patient of his inability and unwillingness to conform within reasonable limits and his refusal to forego individual desires and anti-social behavior, active or passive, for the sake of the social weal.

Every mental hospital is a successfully going concern in the functioning of a practical democracy. In mentally sick patients the emotions are unchecked and judgment is sadly impaired. Mental patients are no longer able to appreciate that there is an intermediate area, common property upon which all human beings have some degree of just claim. The mental patient will neither conform nor concede and, indeed, often he will try to annex this common social area and property. The psychiatrist can readily predict the inevitable result. Soon society will retaliate upon that person who flagrantly disregards the social code. Indirect and even direct social pressure is exerted and the individual is removed from his social group. Once in a mental hospital, the reward for improvement is a social reward. As he improves the patient is permitted to live in a group of patients who have attained some measure of respect for each other's rights. Finally, the important criterion of recovery is a social criterion—the criterion of the restoration of the capacity to observe in behavior the balance between individual rights and social needs and demands. The recovered patient has regained possession of a more sanely evaluated, more wisely modified, more highly prized conception of personal liberty—only then may he rejoin his social group, enjoy its privileges and help in meeting its responsibilities.

The social portrait of any human being could picture him surrounded by a series of concentric circles. The circles immediate to him might symbolize inalienable personal rights—a very few personal and sacred rights like the right to preserve one's life; the right to bar unwanted and unauthorized intruders from one's home; the right to worship God as one's conscience dictates; the right to think independently, though not always to carry thoughts into action.

Beyond these limited circles of personal liberties, there are many more circles. The areas they enclose become progressively larger and more remote from the central figure of any individual. It is inevitable that soon these areas must impinge upon and overlap concentric regions which encircle other human beings. Highly placed or lowly placed, no one has more than the merest fractional claim upon such mutually held territory. For instance, insistence that others must believe and act as we believe and act and resort to forceful measures to compel agreement is not the exercise of personal liberty. It is an attempt to throttle the liberty of others—license, not liberty. It is dangerous for democracy to mistake license for liberty. This intermediate mutually held territory should be and, in fact, it must be, a land of fair "give and take"; of reasonable concession and of decent tolerance. While this area must necessarily have shifting boundaries, yet it is so significant that I do not think it is too much to say that the survival or the death of democracy will depend upon a clearer understanding and a more accurate delineation of the "I and You" relationships enclosed in the area. In order to live successfully for democracy in the world outside of mental hospitals we must learn the same lesson the patient who is inside the mental hospitals must learn. In a democracy whether it be a political democracy or a mental hospital democracy, one cannot think and act only in terms of self. Life cannot be only the "beer and skittles" of our rights and dues. There must be also the daily solid fare of duties. Psychiatry might counsel men to observe the practical workings of democracy inside the mental hospital and say to them: "Go thou and do likewise."

Psychiatrists are not unversed in the ways of wishful thinking. For a long time, as the Cinderella of medicine, we indulged in wishful thinking about the day when we would be permitted to "eat with the family." After being admitted to the family circle psychiatry began to make phenomenal progress, so it was not unnatural to believe that the planning day-dream of today might become the reality of tomorrow. Undoubtedly man will always retain strong self-protective behavior drives. It could scarcely be otherwise in view of the significant rôle played by self-preservation in the long and bloody history of his struggle for survival. How-

ever, as time passed the stark reality of "me and only me" was somewhat relieved and modified by the expediency of the greater strength and the lessened responsibility and blame produced by the bond of numbers of human beings gathered together and later, much later, by thinking and behavior promoted by the acquisition of the so-called super-ego functions. In every human being there is at least some tinge of loyalty and regard for his family. Sometimes it soars to the peaks of idealism, life being abandoned so that another in the family might survive. Again, in almost every human being there is at some time at least a trace of feeling for the State, the land of his birth or adoption. Sometimes, too, this segment of self reaches for the skies and we view with awe the kind of patriot who is saddened only because he has but a single life to give for his country. The war has made many such patriots. Finally, in the majority of men, usually there is, at least a speck, too often ultra-microscopic, of feeling for all men, not as individuals, perhaps, because they have suffered grievously because of the war, but feeling for them in the aggregate, en masse, a bond of the sameness under the skin which is the essence of the true brotherhood of man. Here then in the self; in the family; in the state and in the wide world segments are the ingredients of true democracy. If these were interlocked, justly proportioned and inculcated into the personality of men, democracy would have achieved its supreme destiny. Then there would be an inner citadel of democracy in the mind and soul of the majority of men, so stoutly defended that the blandishments of evil dictators or their threats, their propaganda or their pressure-politics could never hope to storm the fortress of freedom.

Perhaps, such wishful thinking leads to the more realistic thought, that psychiatry is qualified to teach the dangers of national isolationism. Psychiatrists have frequent and trying experiences with psychological isolationists—the schizophrenics. These prisoners of thought are often highly successful in utilizing their symptoms to seal tightly their privacy from intrusion. As is well-known, in many of our schizophrenic patients the inner and the outer defenses against the encroachments of the realities of the environment are so skillfully placed that they cannot be stormed by even the most carefully planned assaults—chemical, electrical and psychological. These true isolationists of the mind keep their worlds of phantasy invulnerable to invasion from the external world for psychotic life spans of 20, 30, 40, 50 or more years. Of course, a price must be paid for this pathological security—a price of inactivity, inertia and finally the crumbling of the structure of the personality. In many of its dimensions such individual psychological isolationism is the miniature of national political isolationism.

After all the gospel of extreme nationalism is difficult to comprehend. In view of the gifted intellectual endowments of some of the isolationists it is hard to comprehend how they can actually believe the doctrine they preach. Apparently, in effect, they believe it is possible to surround these United States with a Chinese wall impenetrable to military invasion by land, sea and air or to economic and ideological attacks. Inferentially we would also be immune to the penetration and leavening influence of other cultures including democratic ones. We are urged to gather behind this wall and go about our business! In this at least, the rabid isolationist is as fanatical and fantastic as is any schizophrenic patient.

Stripped of ornamental language the conclusion of the isolationist is as follows: "We don't need to bother with these foreigners. Let them settle their own quarrels."

This, even though several foreigners controlling hundreds of millions of human beings have been vigorously engaged in trying to deal a death blow to the kind of democracy to which we subscribe and by which we wish to live.

The isolationistic mental patient may succeed in defending his domain of unreality since it is only a mirage of phantasy. The stuff of which phantasy is made is nonmaterial. It cannot be destroyed by shells, bombs or torpedoes. So the mentally sick isolationist has the edge on the political isolationist. The result of isolating itself would be catastrophic for the nation. Isolationism is the antithesis of democracy. It could end

only in stagnation, paresis, deterioration and destruction.

Psychiatry knows from experience that the formula of war cannot be the eventual answer to our human problems. It is too regressive. Perhaps the greatest evil of war is not that it causes human suffering in that it maims and kills but that it is hopelessly archaic and stands in such shameful contrast to man's evolutionary strides in so many other directions. Psychiatry must abhor the archaic. It is significant that in less than ten decades psychiatry can point to an amazing comparison between the blood stained pages of the history of its early days recording the shameful story of man's inhumanity to helpless mentally sick fellow men and the clean white pages of later chapters, setting forth notable humanitarian and scientific triumphs. Success in abandoning the formula of violence in less than a century is no mean achievement. Yet this is merely one of the many reasons why psychiatry can and should speak in positive words to a frightened and chaotic world, speak a message derived from its hundred years experience in dealing with the mentally sick on the basis of a non-violent code.

Should that day ever arrive when a democracy is no longer a target for propaganda, sometimes constructive, frequently misguided, too often evil, then that democracy will no longer exist. Democracy must protect its minorities, even at the risk of unscrupulous and evil propaganda, finding for a time protection under its cloak. Democracy itself must not hesitate to utilize honest propaganda.

Psychiatrists do not let the morale of patients take care of itself, for upon reconstruction of morale depends recovery. Irrespective of benefits derived from pharmacological and other therapies, recovery hinges upon several fundamental considerations.

1. That the everyday world of realities, in spite of its sorrows and defeats, is still a better world than the world of mental illness. This is the propaganda text derived from the gospel of psychiatric morale.

2. That the psychiatrist himself believes the gospel he teaches.

3. That the propaganda of the psychiatrist and his aides must contain more than glittering generalities and promises. It must include a maximum effort of deleting from the environment to which the patient will return, at least some of those conditions of life which are too unfair and too burdensome.

4. That the methods, plans, techniques, in other words, the propaganda employed by the psychiatrist in order to accomplish his purpose of reinstating the patient into his former niche of family, occupational, social and community life, is not only skillful but also honest propaganda. Unless it is honest, it will not long survive its application. Reality must be sold to the patient on honest terms.

5. Propaganda must deal in "futures" as well as present realities. The life to which the patient is asked to return must be shown to him, not only in its everyday satisfaction but also in the perspective of the reasonable expectation of expansion and enrichment.

No matter how splendid be a product, still is honest propaganda needed to advertise it. A man may make a perfect bed or a mouse-trap. The bed may be so slumber inviting that the most confirmed insomniac need merely look at it and at once he begins to yawn and his eyelids droop. The mouse-trap may be so cunningly contrived that mice from far and wide would come in great hordes squeaking to be imprisoned in its meshes. Even were all these things true about the beds and the mouse-traps, still they would not be used unless people were told about them. Unless there was sales-talk resulting in sales, the inventions would die with their inventors. No matter how fine the product—or the nation—still is propaganda needed to sell it. For the nation propaganda is needed to make it appreciated and loved, lived for and died for.

Individuals, communities, nations, democracies like our own are necessarily imperfect. If the perfect Utopia had been achieved, men would pass into the Nirvana of final accomplishment. No one now living need fear that they will live long enough to witness extinction through perfection.

In view of the fact that the actual situation in this nation, man for man; woman for woman; child for child compares favorably with that of any country in the world and when one can add a promise of even better things, a promise in all likelihood redeemable

in the future, then here is splendid material for honest propaganda. There would seem to be no necessity or expediency to tempt to a program of lying. Taking the bad with the good, our situation is good enough so that a program of truthful propaganda with the objective of raising purposeful enthusiasm to a peak of accomplishment, might well begin with a directive entitled "Debunking Propaganda." It could be recommended as good practice to put ourselves in the place of the person or group expressing the thoughts which have moved us deeply, either in enthusiastic agreement or more often in heated opposition. Might it be that our own accusation of bias and prejudice is in large measure due to *our own* bias or is on the basis of an unreasoning personal dislike of the speaker or of some particular group? How far have we actually *investigated* the issue? How much do we really *know* about it? Is it not well worthwhile to take enough precaution to avoid the danger of going "to town" emotionally on a neatly turned phrase or to save ourselves from the hypnotism of oratory?

The point is that there are no important phases of the problem which confronts us which need be hidden under the vulnerable shield of untruth. Perhaps someone may be tempted to object, "but, honest propaganda is ineffective." The answer is "How do you know? It has never been tried."

It must not be inferred that in order to be honest, propaganda must confine itself to categorical accounts of facts, coldly stated. The natural forte and appeal of propaganda is emotional. However, the emotions are not allergic to truth. But even the truth can be stated—emphatically, warmly and stirringly.

Intelligence is a very fine thing. It is a check and balance and if correctly used, it serves us well and often keeps us from making too great fools of ourselves. However, thought without the strength, warmth and purpose imparted to it by the emotions, would be a pallid and useless thing. If the world depended solely on cold logical cause and effect thinking for its progress it would soon be in a sorry state. Although sometimes illogical, emotional thinking is alive and warm, enthusiastic momentum is produced and often civilization and culture are notably advanced. Thus the thrill of patriotism is wholesome when it helps to realize more effectively the ideals for which a country stands.

The lamps of democracy were not lit by impersonal and unimpassioned thinking. Nor will they be kept burning and saved from being extinguished by this kind of thought, no matter how logical it might be.

Without the driving force imparted by the emotions to ideas and plans, this nation scarcely would have been conceived, or if conceived, it would have been still-born. If it had not been activated by patriotic fervor at the beginning, and many times during its history, it would never have survived. There is abroad in our land a superciliousness masquerading as intellectualism which looks "down nose" at displays of patriotic feeling. It is not at all unintelligent to believe that moving, robust feelings are good for us. We need more patriotic music and pageantry, more festivals and more rituals. Accessions to citizenship might well be dignified by great public festivals of recognition and rejoicing. Such feast days of patriotism would weld more firmly our traditions and aspirations. They are the confirmation of the baptism by birth or naturalization of Americanism.

Such ceremonies would be rich in symbols. A reasonable objection might be that symbols are bad; that they enslave the intelligence by chaining it with emotional bonds. I think the answer is that in propaganda here as elsewhere, symbols are as bad or as good as the things they symbolize.

Psychiatrists understand the dangers and evils of over-symbolization. In certain psychoses, the over-use of the symbol represents not a useful economy of thought but an annihilation of thinking; a severing of the environmental binding threads and a dilapidation of the personality as in one of my patients who wore a bit of dirty cloth on the lapel of his coat, signifying that he was the "Highest Potent"—this symbol being the sole concrete remnant of a once intricate and well-verbalized delusional structure.

Symbols, often of noble lineage, may be put to evil purpose as in the rituals of unscrupulous propaganda. The formula is much the same—the long hushed expectant silence; the dramatic entrance of the high-priest, the keeper of the sacred symbols; the shrill note

of the trumpet; the thundering roll of the drum; the awesome pause—and then the presentation of the symbol, the insignia or the reverently intoned words. The atmosphere is thick with emotion, quite thick enough to smother the intelligence of the devotees.

A symbol may be good, serving its psychological purpose of conserving thought and yet be straightforward and honest. A cheque is a symbol for money. It is a good symbol if the money it symbolizes is in the bank. Certain religious symbolizations are beautifully expressive and helpful, representing boundless love and mercy and stimulating human beings to imitate this infinite love and compassion in their behavior toward their fellows. A kiss is a symbol of love, friendship and trust—a good symbol—unless it is a Judas kiss of death. So are our flag and our national anthem good symbols—symbols of freeing men and not enslaving them; of leading men to the plateaus of liberty and warning them away from the abyss of the debasement and serfdom of the human spirit.

If psychiatry attempted a definition of democracy, it would be a realistic one. Even the neophyte in psychiatry would know at once that so-called human equality is actually non-existent. Mental disease is the greatest of all leveling influences, but even in this most democratic of all democracies, there is no real equality. For instance, from the standpoint of the intellectual dignity of the psychoses, there is a somewhat aristocratic segment in which delusional ideas are closely linked, systematized and logical, and deterioration is withstood for many years. Then there is a kind of a proletariat, with a few vapid delusions pieced out with gross hallucinosis; much silliness and rapidly encroaching deterioration. Nor is there an equality of chances for recovery. Some patients are innately so sound in their personalities that they get well under almost any conditions; in another group it is "nip and tuck" and only very skillful treatment decides the issue; a third smaller segment were damned mentally before they were born and no device of psychotherapy, pharmacology, electricity or surgery can reclaim them.

Riddle stressed the unequal chances of inheritance in these words: "All men are created unequal. No politics or poetry or dogma in this; just a straight clean fact of prime importance to decent thinking on human social problems; and possibly a fact that must be learned, digested and assimilated before unreason ceases to be a threat to all forms of democratic government."

Prompted by the social perspective of Taylor and endorsing his plea for a "subtle series of studies on temperamental national and racial issues and their susceptibilities and interactions," psychiatry might think of democracy in the realistic terms of an acceptance of natural inequalities; a reasonable protection of those individuals who suffer them and a consistent and energetic effort to remove artificial inequalities.

A democracy solely determined by nationalistic boundaries, practices and ideals cannot long survive; unless it find its inspiration, its sustenance, in fact its very reason for existence in the larger democracy of the brotherhood of man then unquestionably it is doomed to perish.

Fittingly, I may close with the words of William Alanson White: "Mental Hygiene has a goal, the *good life well lived*. A gradually improved technique for getting over the understanding of those principles to the public generally, so that mental hygiene may contribute to that enlarged understanding of the average man which is at the basis of a gradually improving civilization."

I give you this Centenary wish: May the Voice of Psychiatry be heard at the Peace Table and may its significant contribution be written into the formula of an Enduring Peace.

EDWARD A. STRECKER, M. D.

President 1943-1944

A Biographical Sketch

LAUREN H. SMITH [1]

Lt. Colonel, M.C., Neuropsychiatric Consultant, 9th Service Command

Edward Adam Strecker, 71st president of The American Psychiatric Association, was born in Philadelphia, October 16, 1886. His ancestry is mainly German, but in background he is Philadelphian. His father, Adam Strecker, and mother, Maria von-Weiler, raised their family in the Quaker City.

Prep school days and later were spent at parochial school, St. Joseph's College and LaSalle College, after which he entered Jefferson Medical College in 1907, graduating in 1911. After internship at St. Agnes Hospital he joined the staff of the Pennsylvania Hospital, Department for Mental and Nervous Diseases in 1913. This association continues to this day, and except for the period of World War I, he and Mrs. Strecker (Elizabeth Kyne Walsh) have resided in the Pennsylvania Hospital since their marriage in 1915. His love of teaching is equalled only by his great interest and affection for the Pennsylvania Hospital.

Through the past 30 years he has grown in personal and professional stature and has played an important part in the development of the Pennsylvania Hospital. The older colleagues often have heard him tell of his interesting early associations in the hospital with three former presidents of the Association, Dr. Owen Copp, Dr. Earl D. Bond and Dr. Samuel T. Orton. This group was together at the Pennsylvania Hospital prior to the World War I.

In April 1917, Dr. Strecker enlisted as a 1st Lieutenant, M.C., and served continuously as divisional psychiatrist for the 28th Division at Camp Hancock, Augusta, Georgia, and in the A.E.F. in France. In fact, he is the only psychiatrist who served throughout the war as a divisional psychiatrist. During this time he was associated with Dr. Salmon, and he contributed the report of Divisional Psychiatry to Volume X of the Surgeon General's Medical Report. (It is interesting to note that one of the first actions of Surgeon General Norman T. Kirk was to arrange for the appointment of divisional psychiatrists.)

Returning from the war with the rank of Major, he resumed his association with the Pennsylvania Hospital and engaged actively in clinical and research work and in teaching at Jefferson Medical College. His main interest in the early 20's was to develop the psychiatric out-patient department of the Pennsylvania Hospital, where, as in most such services, the out-patient got a pat on the back, some reassurance for five minutes, a "Quaker cocktail" (a bitter tonic preparation containing sodium salicylate, fluid extract of cascara sagrada, tincture nux vomica, etc.) and orders to return in one week. In a few years, Dr. Strecker headed an out-patient department where real psychotherapy flourished, and where young psychiatrists begged to have the privilege of learning how to treat psychiatric patients.

Dr. Strecker's interest in teaching extended also to the nursing profession. His contribution in the teaching of psychiatric nursing is not widely known, but there are hundreds of nurses who graduated in various hospitals in Philadelphia, who owe their interest and ability in psychiatric nursing to his courses of lectures. Similar contributions were made in mental hygiene courses, and this was recognized in his appointment in 1924 as professor of clinical psychiatry and mental hygiene to the School of Medicine of Yale University. Although we know "a prophet is without honor is his own country" his unusual ability as a teacher was recognized by Jefferson Medical College, where

[1] Physician In Chief and Administrator, The Institute and the Department for Mental and Nervous Diseases, Pennsylvania Hospital, Philadelphia, Penn. On leave of absence.

he was appointed professor of nervous and mental diseases in 1925. The day he was appointed was celebrated by his many close friends and associates at a well known Inn in nearby New Jersey. Dr. Strecker swears that is the first and last time he can recall that he was really a "full" professor.

His clinical work with private patients and consultations was increasing during this time. Patients as well as associates were impressed by the warmth of his magnetic personality, and his natural sincerity, but his remarkable results in therapy were based on painstaking thoroughness and a sound medical approach. His ability to demonstrate patients simply, to outline treatment and to make psychiatry understood by medical students soon produced a profound effect on psychiatric teaching in Philadelphia. His lectures and clinic had to be guarded by his own students or the Jefferson students found their places taken by the classes from two other medical schools. Cards of admission finally had to be issued. Psychiatry had come into its own in conservative medical Philadelphia. Finally the University of Pennsylvania, recognizing a progressive leader in teaching, requested Dr. Strecker to accept the chair of psychiatry, which he did in 1932. He now gives courses in psychiatry in all four years of the medical curriculum.

Besides formal teaching, Dr. Strecker has always had a special interest in the personal informal training of his younger associates. His clinical associations are numerous. At present, at the Pennsylvania Hospital, he is consultant-in-chief of the Institute, consultant to the Department for Mental Diseases, psychiatrist to the Department for Sick and Injured. He is attending psychiatrist, Psychopathic Division of the Philadelphia General Hospital, neurologist to the Germantown Hospital, Philadelphia. He is a member of the American Board of Psychiatry and Neurology, Inc.; member of the Masonic Committee for Investigation of Schizophrenia; chairman, Scientific Committee National Committee for Mental Hygiene; member of the Council for Study of Alcoholism and Committee for the Study of Sex Deviation.

His medical society memberships include the Philadelphia County Medical Society, Pennsylvania State Medical Society, American Medical Association, Philadelphia Psychiatric Society, Philadelphia Neurological Society, Philadelphia Pediatric Society, Pennsylvania State Psychiatric Society, Fellow of the College of Physicians (Philadelphia), Fellow of the American College of Physicians, American Psychiatric Association, American Neurological Association (former vice president), New York Society for Clinical Psychiatry, American Orthopsychiatric Association, The Clinical Interurban Club, Sydenham Coterie, Fellow of the Royal Medico-Psychological Association of Great Britain.

Dr. Strecker has published somewhat more than 100 monographs and articles, about 20 per cent of them representing original research. He has contributed to systems and textbooks of medicine including Osler's Textbook, Musser's Textbook, and the Oxford and Nelson Loose Leaf System of Medicine. The range of topics include clinical psychiatry, clinical neurology, psychiatry of childhood, adult emotional problems, mental hygiene, endocrinology, social psychiatry, neuropathology, and military psychiatry.

He has contributed certain books of importance namely, "Clinical Psychiatry" (5th Edition) (with Ebaugh); "Fundamentals of Psychiatry"; "Discovering Ourselves" (with Appel); "Alcohol—One Man's Meat" (with Chambers); "Guide to Examination of Personality and Behavior" (with Appel).

Except for "Fundamentals of Psychiatry," his most recent book, the last book published was "Beyond Clinical Frontiers," embodying the seventh Thomas William Salmon lectures. Written and published before World War II these lectures were almost prophetic of the disturbances of the mass psychology of the world, which we have seen during this war period.

Prior to this war, Dr. Strecker was consultant in mental hygiene to the U. S. Public Health Service; consultant to the Veteran's Bureau, and secretary to the Sub-Committee on Psychiatry of the National Research Council. Shortly after the beginning of this war he was asked to become consultant to the Bureau of Medicine and Surgery, U. S. Navy, and also to the Secretary of War, Army Air Forces. He organized the Phila-

delphia course in psychiatry and neurology for naval medical officers. In December 1943 he was appointed by President Roosevelt on a board of five outstanding physicians to investigate and report on medical requirements for entry into the armed services.

At great personal sacrifice he has spent much of his time carrying on duties associated with these appointments. It is very fitting that one occupying these important consultative positions be the president of our Association at this time.

This record of accomplishments has been recognized by certain educational institutions. From LaSalle College, Dr. Strecker has received the honorary degree of Litt. D. in addition to those of A.B. and A.M. granted previously; from St. Joseph's College the degree Sc. D. was followed by that of LL.D. granted by Franklin and Marshall College.

The purely personal must not be omitted. Memberships in fraternities include Sigma Phi Epsilon; Alpha Kappa Kappa; Alpha Omega Alpha. He is interested in poetry, literature and writing, fond of athletics and especially pugilism; he dislikes evening clothes; especially hates bridge considering it to be a dangerous courting of unreality; he is always ready to talk to a student or friend about teaching or psychiatry. But he would just as soon talk to anyone about mystery plots—because he is rarely found without a few paper back murder mysteries at hand; never disappointed in them providing they contain at least three murders per book.

In these past 30 years, psychiatry has progressed as a kindly scientific human growth in the field of medicine. The personal and professional career of the 71st president of The American Psychiatric Association, Edward A. Strecker, is a mirror of this progress.

CURRENT TRENDS IN MILITARY NEUROPSYCHIATRY[1]

LIEUT. COLONEL MALCOLM J. FARRELL, M.C.

AND

CAPTAIN JOHN W. APPEL, M.C.

Introduction

One of the important lessons learned in the last war was that a considerable number of men, while fulfilling the physical requirements for service, were nevertheless non-effective as soldiers because of mental abnormalities. Psychotics, mental defectives, severe psychoneurotics and psychopaths were untrainable, untreatable, disturbing to morale, and eventual expensive liabilities to the government. It was obvious that these men were of no use to the service; an attempt should be made to prevent them from being accepted, and when discovered in the Army they should be discharged. As a result of this lesson there developed what might be called "the era of diagnosis and disposal" in military neuropsychiatry. It was widely believed that normal men did not develop psychiatric disorders, only weaklings or those with underlying emotional instability which could have been detected in advance. Thus, it followed if a man developed a psychiatric disorder, that fact in itself indicated he must have been abnormal originally. So much attention was focused on the non-effectiveness of these cases that many authorities and even some psychiatrists believed that the entire problem of psychiatry in the Army could be solved by careful screening at induction and by constant search and elimination of these individuals during the training period.

A lesson learned early in this war was that the matter was far from being so simple. Psychiatric screening, although important, was merely the first step in what would be required to solve the problem.

Incidence of Neuropsychiatric Casualties

The first indication of this was obtained as soon as statistical reports began to come in from the field. At induction stations approximately 12 percent of the men examined were rejected as mentally or emotionally unfit for service. This was 35 percent of the rejections for all causes. The number rejected constitutes a significant proportion of the entire manpower pool. In spite of this screening process, the rate at which men were appearing for sick call or were admitted to army hospitals with neuropsychiatric disorders was seriously high. These cases were promptly discharged but it appeared that the more men discharged, the more new cases developed. Not only have many cases appeared among troops in training but a significant percentage of the casualties occurring in combat have been neuropsychiatric. A leading cause for casualties returned from overseas has been neuropsychiatric. Almost as many of the medical discharges from the Army have been for neuropsychiatric reasons as for all other causes combined and this does not include the psychopaths and mental defectives who are discharged under a non-medical category. The loss in manpower has been significant.

Nature of the Cases

From this it cannot be concluded that the screening process has been useless or that if screening had not been in effect the number of cases developing in the Army would not have been still greater. Mental defectives, severe psychopaths, psychoneurotics and psychotics are still non-effective as soldiers and cannot be used in the Army. The point is, however, that this group of individuals comprise but a small fraction of the neuropsychiatric cases being encountered. The vast majority were cases of psychoneurosis. They constituted almost all of the neuropsychiatric cases occurring in combat and most of those returned from overseas. Similarly, the greater part of neuropsychiatric cases admitted to hospitals from troops in continental United

[1] Read at the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 15-18, 1944.

States and the greater part of those discharged from the Army were psychoneuroses. Furthermore, considerable evidence accumulated indicating that a large proportion of these cases were occurring in individuals whose past history was negative for neuropathic traits or anything that could be taken to indicate "predisposition" to psychiatric disorders. In another significant percentage of the cases the history showed varying degrees of psychologic disturbance but it was felt by the examining psychiatrist that the stress of the situation rather than the weakness of the personality was of more importance in causing the disorder. The myth that only weaklings develop psychiatric disturbances was finally exploded completely by reports coming from a combat theater where a particularly careful study was being made of this problem. It was found that in one campaign the incidence of psychiatric cases was uniformly higher among veteran combat troops than among fresh, green troops. Months of intensive combat had weeded out all the weaklings. The men who remained had proved the toughness of their underlying personality structure by their mere survival. Yet fatigue and other factors produced more "psychoneurotics" in this group than among fresh, untried troops. In short, it became evident that anybody could develop a psychoneurosis under certain circumstances. The limitations of screening became obvious. If screening were to weed out anybody who might develop a psychiatric disorder, it would be necessary to weed out everybody.

Limitations of Screening

Psychiatric screening can weed out only abnormal men. It cannot be expected to have any effect whatsoever in decreasing the rate at which "normal" men break down. It further runs the risk of eliminating men who, although having some defect of personality, nevertheless, if properly handled, can render valuable service in the Army. In setting up psychiatric criteria for manpower selection, it was possible to fall back on a considerable fund of knowledge as to the personality characteristics of the men who had broken down —both in this war and the last. Little was known, however, about the men who did not break down. Extensive studies are being made both of troops successful in training and of troops who have gone through intensive combat without developing psychiatric disorders. Preliminary results, although they corroborate the general impression that the incidence of neuropathic traits, for instance, is higher among men who have broken down than among those who have not; nevertheless, the results also show that there are many men successfully making the grade and doing good jobs who admit to having many of the signs and symptoms ordinarily taken to indicate weakness of personality. For instance, among all troops on duty in continental United States, a significant percentage admit current nail biting; say they are troubled by sick headaches; have been bothered by nightmares; by "upset stomachs"; by nervousness; by frequent insomnia; by dizzy spells; and by frequent palpitation. It is very probable that the incidence of these same signs and symptoms is considerably higher among "normal" civilians.

This means that screening can and must reject obvious psychiatric non-effectives. It must not be so ambitious in attempting to detect potential psychiatric casualties. Some consideration must be given to the current need for manpower; those selected for combat duty obviously must be of tougher caliber than limited service personnel.

The assumption that anybody developing a psychiatric disorder was a weakling led to the policy of discharging anybody who was labeled with a psychiatric diagnosis. The wastage inherent in this policy became evident when it was demonstrated that if regarded as medical emergencies and properly treated, 60 to 80 percent of the cases occurring in combat recovered and returned successfully to full combat duty. Another unfavorable result of the policy soon became evident. Study of these psychiatric cases revealed that, although true malingering was very rare, the escape mechanism was prominent and frequently very close to the conscious level. The policy of discharging these cases not only made the escape mechanism effective but encouraged its use. It constituted a reward for failure. Knowledge that

the diagnosis of a psychiatric disorder led to prompt discharge from the Army became commonplace among the troops and was important in the development of further cases. To circumvent the escape mechanism and remove secondary gain from illness, it became evident that it might even be necessary to retain known psychiatric non-effectives within the Army instead of discharging them back to civilian life. A further aspect of the problem was that in the early stages of the war it was possible to contemplate an Army made up of the cream of American manhood. It has since become evident that this is a people's war and must be fought by the people regardless of the stability of their personality.

Dynamic Factors

Further understanding can be gained by considering the relative incidence of psychiatric disorders under various circumstances. Fig. 1 shows a series of admission rates for comparison.

It is apparent that by all odds the highest rates occur in units engaged in actual combat. The highest rates of all are encountered in the smaller units where there is the highest concentration of men actually exposed to fighting conditions. The rates for troops in combat theaters are higher than for troops in continental United States. It is the rate of the troops actually fighting which raises the level for the entire theater. In overseas theaters where there is no active combat, the

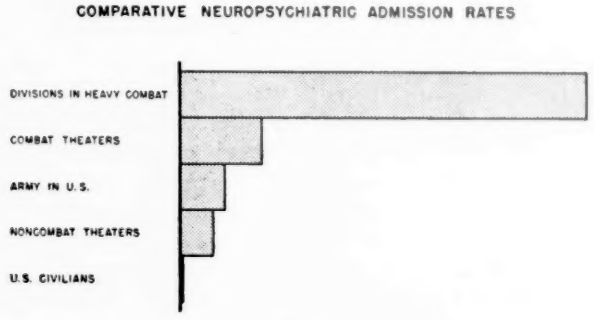

FIG. 1

It thus became clear that in this war psychiatrists were going to have to do more than concern themselves with diagnosis and disposal. The problem could not be tossed aside by assuming psychiatric cases were weaklings who should not have been accepted by the Army in the first place. Instead of discharging them it would be necessary to salvage them. It had to be recognized that screening processes, although important, nevertheless could hardly be called prevention. Prevention began where screening left off. It was necessary to find out what was causing men to break down and then attempt to eliminate those causes. The psychiatric problem involved not just the psychotics, the psychopaths, the outer fringe of the Army; it involved the everyday problems of the everyday soldier.

rates are lower even than among troops in continental United States, in spite of the fact that extremes of temperature, boredom and isolation may be suffered. Perhaps of most importance to a proper understanding of the psychiatric problem in the Army is to note the rate of admission of civilians to civilian hospitals. This, of course, cannot be compared to the neuropsychiatric admission rate in the Army, since it represents an entirely different type of case. Its relative magnitude does point up just how different the psychiatric problem in the Army is from that in civilian life. The vast majority of the neuropsychiatric cases admitted to hospitals in the Army would not be even considered for hospitalization in civilian life. Cases of psychoneurosis, psychopathic personality, mental deficiency, and even inconspicuous psychosis

can get along perfectly well in civilian life without hospitalization. In the Army, however, the requirement of performance is such that even a very mild disturbance is enough to cause a man to drop out of the ranks. Then if he is unfit for duty there is no place for him except in the hospital. Furthermore, admission to a civilian mental hospital usually takes place only when the condition of an individual has changed, a new disorder has developed, or an existing disease has become worse. A large proportion of the psychiatric cases admitted to army hospitals are no sicker than they were before they came into the Army. It has merely become evident that temporarily or otherwise, these men are unable to keep up to the required performance. The difference from the civilian problem becomes more evident when it is recalled that psychiatric cases in the Army arise in a population from which the least stable 12 percent has been screened out—the same 12 percent which in all probability includes the vast majority of cases seen by psychiatrists or admitted to hospitals in civilian life. In other words, in the Army psychiatrists are dealing with an entirely different segment of the population than that customarily seen by psychiatrists in civilian life.

The fact that the highest neuropsychiatric admission rates occur in combat is, of course, not surprising. It is rather the degree of difference between rates in combat and rates anywhere else which is often insufficiently recognized. The aspects of combat which are important are shown in Figs. 2 and 3.

In Fig. 2 the rates for battle injuries and neuropsychiatric casualties among a certain number of divisions have been compared in index form, during a seven-week period of combat. The rates have been expressed as index numbers having as a base the average rate for the period in each case. This was done to facilitate comparison of the two sets of rates which, of course, are of different magnitude. The intimate relationship is evident. The rate of battle injuries is presumed to be an index of intensity of combat which is thus shown to have a remarkably direct relationship with the rate of neuropsychiatric casualties. Fig. 3 shows the percentage of combat casualties which were neuropsychiatric among a group of battalions serving continuously in the line without relief for 21 consecutive days. It is seen that the percentage of neuropsychiatric casualties rises steadily. In general this is characteristic: the percentage of neuropsychiatric casualties rises in direct proportion to the length of active combat duty.

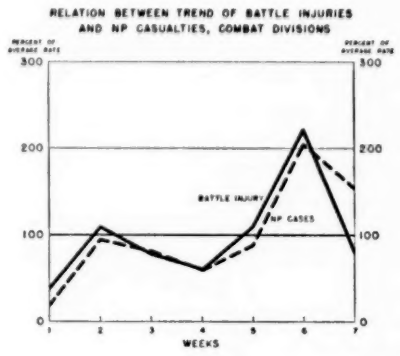

FIG. 2

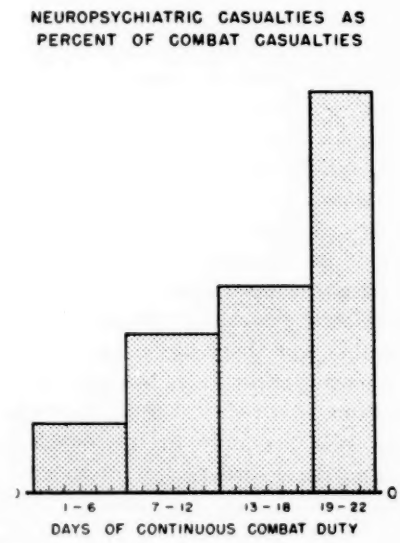

FIG. 3

This point is amplified by universal reports from psychiatrists emphasizing the rôle of exhaustion in these cases. Difficulty in sleeping under shell fire, in open foxholes, extremes of temperature, wet and mud; cold food, and constant demands for physical exertion produce a state of physical and mental fatigue which is of paramount importance in precipitating these psychiatric breaks.

Rest, induced by sedation, appears to be the most important factor in their recovery.

Inquiring further into the dynamics of psychiatric disorders both in combat and training, it becomes evident that a number of other factors are playing rôles. A certain percentage of cases appear to be essentially casualties of job misassignment: timid clerks assigned to machine gun teams, truck drivers assigned as clerks. It has become common knowledge in the Army that the state of morale of an outfit bears a direct relationship to the number of its neuropsychiatric casualties; that in fact, beyond a certain point, low morale in an individual actually constitutes a psychiatric disorder. An old military saying exists to the effect that there are no poor regiments in the Army, only poor colonels. A similar statement could be made concerning the relationship of leadership to neuropsychiatric casualties. It has been found repeatedly that outfits fighting side by side under the same conditions and composed of essentially the same type of troops may have widely divergent rates of neuropsychiatric casualties. The development of a psychiatric disorder in a company grade officer not infrequently has been followed by an outbreak of similar disorders in the troops under his command.

Perhaps of most interest from an historical standpoint is the growing realization of the importance of motivation in the dynamics of psychiatric disorders. From the experience of this war there has emerged increasing evidence that attitudes toward the enemy (motivation, in a political sense) are playing a major rôle not only in the development of psychiatric disorders but in morale and operational efficiency. To some this relationship has been obvious; yet it has received scant attention in the literature and, because the quantitative measurement of motivation is so difficult, the evidence of its influence has had to be in the realm of clinical opinion rather than demonstrable fact. Yet psychiatrists throughout the Army testify to its importance. Loyalty to a leader, fear of group disapproval, a sense of duty, are of course significant, but underlying these are the powerful forces of the personality—aggression and fear which, unless directed at the enemy, may focus on fellow soldiers, leaders, the home front, and lead to pathological conflict. It appears that everything else being equal, a man who has personal conviction as to the necessity for fighting this war is less likely to develop a psychiatric disorder than a man who is indifferent to the broader issues and more concerned with his purely local situation.

Solution of the Problem

From these considerations it was obvious that a number of factors were important in causing psychiatric disorders. Personality structure was merely one of several. Fatigue, leadership, morale, discipline, job assignment, motivation, training, domestic difficulties—each of these might be as important as personality structure in any given case and in combination frequently more so. If psychiatric cases were to be prevented, it would be necessary to control or modify any or all of these factors. If men were breaking down because they were inadequately motivated, then prevention must include attempts to give men clearer understanding of the issues at stake in the war. If job misassignment were playing a rôle, then it would be necessary to see if job classification and personnel placement could be improved from a psychiatric standpoint. Similarly, if leadership, morale, discipline and training were important factors in mental health, then it would be the responsibility of psychiatrists to concern themselves with these problems also.

To accomplish this would require a radical change not only in the concept of the duties of a psychiatrist but in the type of military unit to which he was assigned. Diagnosis and disposal could be accomplished most efficiently in hospitals, but here psychiatrists came in contact only with troops who had already broken down. To prevent cases occurring it would be necessary to take psychiatrists out of hospitals and put them in the field where they could come into contact with normal men. For treatment also it was essential that psychiatrists be in a position to start treatment when the disorder was in an early stage. Further than this psychiatrists would have to enter into the everyday life of the Army. If their recommendations concerning

training, job classification, and morale were not to be theoretical and impracticable, it would be necessary for them to acquire an intimate knowledge of the Army in all its phases, particularly knowledge of the everyday problems of unit commanders. Not only were many psychiatrists naive in this respect but many of them by training were more accustomed to the care and treatment of psychoses than to the prevention and early treatment of psychoneuroses. Furthermore, the Army was faced with an acute shortage of psychiatrists. There were hardly enough to cover the hospital wards, let alone the field. It was necessary to utilize general medical officers on hospital neuropsychiatric wards and enlist the aid of civilian schools to train new psychiatrists.

Several major steps toward solution of the problem have been taken. The first was to place psychiatrists at the command headquarters of each basic training center in the Army. Here with staffs of varying sizes they engaged in the triple function of screening, prevention and treatment. Early in the fall of 1943 some of the best young psychiatrists were combed out of the hospitals in order to provide care as close to the front line as possible in combat. At the Washington level, formal liaison was established with the Morale Services Division and informal liaison with Personnel and Training headquarters.

Prevention

Preventive measures have been taken by psychiatrists along three general lines: (1) Educational; (2) motivational; and (3) environmental. By education is meant what is usually thought of as mental hygiene and actually amounts to the attempt to teach military personnel what has been learned about human nature from the study of mental disease. The premise is that this knowledge can be used by individuals for the maintenance of their own mental health and by officers in the problems of leadership and morale.

A course of six lectures on mental health is given to all officers in the Army as a part of their training. These cover the principles of personal adjustment, personality structure, motivation, specific stress factors, signs and symptoms of breakdowns, and measures to maintain mental health of the group. A similar course of three lectures is also given to all enlisted men. These cover the subjects: personal adjustment problems, fear, resentment, the bodily effect of emotions, and a healthy viewpoint toward being in the service.

The most effective means of disseminating psychiatric knowledge has been found to be informal discussions with line officers either singly or in groups. Here specific cases can be discussed as well as problems of morale, leadership, discipline and motivation.

Informational media are also beginning to be used. Articles on mental hygiene, fear, A.W.O.L., adjustment problems, and the causes of nervous breakdowns have been published in camp newspapers, War Department pamphlets, and such army periodicals as *Yank Magazine* and *The Infantry Journal.*

If men develop psychiatric disorders through inadequate understanding of issues at stake in the war, a direct method of prevention would be to present troops with information showing them the degree to which they are threatened by the enemy and the individual measures required on their part to remove this threat. To attack the problem of motivation of military personnel early in the war, the Army set up an organization now known as the Morale Services Division. It has the mission of assisting the command in supplying troops with current news and information concerning the background and causes of the war. This is accomplished by the production of motion pictures, such as the *Why We Fight* films, radio programs, news service, posters and periodicals for general distribution, and by the inauguration of a system somewhat similar to the British A.B.C.A. (Army Bureau of Current Affairs). One hour each week is set aside for all troops in training in the Army to discuss current news and problems of why we fight, under the leadership of the unit commander. Each regiment in the Army has an orientation officer who advises the unit commander and supplies these groups with informational material sent him from Washington. Psychiatrists at replacement training centers and

in divisions are beginning to act as advisers both to the orientation officers and unit commanders. At the Washington level there has been increasing collaboration between the Surgeon General and the Morale Services Division in these activities.

The majority of the factors which determine the mental health of military personnel are functions of command. In other words, the main job of preventive psychiatry has been done and must be done by commanding officers of the line. The psychiatrist acts as adviser to the command. In this capacity he can be alert to the situational factors which are precipitating psychiatric disorders and recommend to the command the measures necessary to alleviate or remove these factors. He surveys the training program from a psychiatric viewpoint, advises concerning the training schedules, the method of conditioning troops to battle situations, and adjustment to extremes in climate. He pays close attention to such matters as the furlough policy and the handling of A.W.O.L. cases. Collaborating with the personnel classification officer he seeks to prevent many psychiatric disorders by bringing a medical viewpoint to bear in job assignment problems. He quickly detects signs that troops are overworked and in need of a break. Equally, he is alert to untoward effect of boredom from excessive idleness. He assists other agencies which are important to the mental health of troops: the chaplain, the Red Cross, and the recreation officer.

Treatment

In respect to treatment, it is the present policy to regard every case as salvageable until proved otherwise. Due to limitation of professional personnel and urgency of the military situation, priority must be given those cases expected to return to duty. However, even though cases not fitting in this category cannot be given definitive care, it is intended to make every effort possible to initiate treatment of personnel awaiting discharge to civilian or veteran facilities.

A second policy is that every case shall be regarded as a medical emergency. It is vital to start treatment immediately while the cases are still in the amorphous state in order to prevent symptoms from becoming fixed. Instructions have been issued to all medical officers for the initial handling of these cases. Avoidance of indiscriminate evacuation, and treatment as near as possible to the site of onset is a corollary of this policy. Disposition and treatment of these cases in combat are under the supervision of the division psychiatrist who works either at the divisional area or at the evacuation hospital close behind the lines. During training both the division and replacement training center psychiatrists function to see these cases early and evidence is already growing of the efficacy of this system.

A third important principle is to attempt to keep psychiatric patients out of hospitals, since it is well recognized that hospitalization has the effect of exaggerating the concept of illness in the patient's mind. The importance of treating patients in a military atmosphere under strict discipline was taught by the last war and has been reaffirmed in this. To an increasing degree patients are being treated on an outpatient basis. In addition to the clinics maintained by the division and replacement training center psychiatrists, the outpatient services of station hospitals have been expanding rapidly throughout the Army. To investigate further the possibilities in this direction, separate battalions for retraining psychoneurotics were set up in three basic training centers. These battalions are not distinguished from the troops as a whole and follow similar military programs, except that emphasis is given to training in specific skills rather than to marches, obstacle courses, etc. They are under the direction of picked line officers, and psychiatrists, psychologists and psychiatric social workers are attached to the battalion headquarters. The success of these centers warrants their continuation and extension.

The fourth treatment principle arises from recognition that many of the psychiatric cases are situational reactions. Every effort is made to modify and remove the situational factor which is believed to have precipitated the disorder. This applies particularly to the problem of job assignment. Attempts are made not only to assign the individual to a

job for which he is emotionally fitted but to train him for that specific job as an integral part of his course of treatment. This is not a simple problem in the Army but is already being accomplished by psychiatrists in divisions, replacement training centers, and the special training battalions. In addition, full use is made of the Red Cross, social service workers, and other agencies in the solution of domestic problems which were felt to be playing a rôle.

In hospitals insulin and electroshock are proving of value for the treatment of psychoses. For psychoneuroses, subcoma doses of insulin are used in combination or consecutively with barbiturate narcosis. Intravenous barbiturate abreaction and synthesis is of value. Group psychotherapy is being adopted rapidly and increasing use is made of adjuvant therapy: occupational therapy, recreation, athletics and music. Recognition of the therapeutic effect of the attitudes and personalities of ward personnel is regarded as important and attempt is made to educate corpsmen, nurses and medical officers in this respect.

All general hospitals in this country now have a program of graduated convalescence in which full use is made of military discipline, technical and vocational training, education, recreation and entertainment. Neuropsychiatric patients participate in this program as a separate group.

Special hospitals have been set aside for the treatment of neuroses in several overseas theaters. In this country there are two hospitals exclusively for mental patients and, in addition, sixteen general hospitals have been designated as neuropsychiatric centers.

Conclusion

In pursuing these policies of prevention and treatment, many difficulties remain. Perhaps the most outstanding is the widespread misconception regarding the whole subject of mental health in the mind not only of military personnel but of the civilian public, the family back home, and the public press. It is generally recognized that the concept of physical health covers a wide range of conditions ranging from a light head cold on down to terminal lobar pneumonia. Mental health, on the other hand, has been regarded as being black or white. Either a man was insane or he was completely normal. The possibility has not been considered that there might be anything in between. Actually, of course, mental health just as physical health ranges all the way from bad to good. A man may have minor temporary mental ill health just as he may have a head cold. Mental disorders may be acute or chronic, severe or mild; just as a man may have simultaneously a broken leg and the grippe he may have an acute anxiety neurosis superimposed on a psychopathic personality or an organic condition.

A great deal of the confusion has arisen on the basis of terminology and semantics. Any word beginning with the letters "psy," to the average mind, suggests something mysterious and alarming: insanity, perversion, homicidal tendencies. Many laymen become frightened and resentful when a psychiatrist applies a medical term to conditions they were used to recognizing as a "case of the jitters" or "gone stale" or "nervousness." It is difficult for laymen to realize that when a case of the jitters is sufficiently serious to incapacitate a man or produce insomnia and indigestion, a psychiatrist may call it psychoneurosis and yet not mean anything more serious than was meant by the layman who called it the jitters. Actually, of course, the problem extends further than this. The question arises whether present psychiatric terminology was designed to cover the entire range of mental health. Is it perhaps necessary to devise a new set of diagnostic terms to cover the range of acute transitory psychiatric disturbances which occur in "normal" individuals in reaction to abnormal stress?

In conclusion, it may be said that the problems of mental health in this war have presented a major challenge to psychiatrists. To meet this challenge it was necessary to revise concepts and to approach problems with new viewpoints—it was necessary to shift attention from problems of the abnormal mind in normal times to problems of the normal mind in abnormal times.

PSYCHIATRY IN THE BRITISH ARMY

BRIGADIER J. R. REES

Consulting Psychiatrist to the British Army

Among the many aspects of medicine and social science in which Britain can point to great progress as the result of diligent study of wartime experiences psychiatry takes a prominent place.

In World War I the prolonged strain of trench warfare in France on the Somme caused a high incidence of neurotic breakdown under the conditions of battle, and what was then very unwisely called "shell shock" became one of the major problems. The experiences of treatment in the combat zone and later in Britain itself led to the development of our knowledge of neurotic states and the setting up of facilities for dealing with these conditions in civil life.

In the intervening years up to 1939 psychiatry in Britain made considerable progress. Medical men became more aware of the importance of emotional disorders and of early treatment for adults and children. Legal provision for psychotic persons improved and modern methods of treatment for the psychoses by insulin, electric convulsion therapy, continuous narcosis, occupational therapy and even pre-frontal leucotomy have improved the prognosis for these conditions.

The medical services of Britain's army shared in this general increase in knowledge, and immediately on the outbreak of the present war consultants in psychiatry were appointed to function in the armies at home and overseas, with consulting physicians and surgeons.

At the present time, there is a Directorate of Army Psychiatry under the Director General of the Army Medical Services. This Directorate, in which five or six experienced psychiatrists work and which is in intimate touch with the two consultants in the subject at home, acts as the coordinating and directing force of all the technical activities of psychiatry in the Army Commands of Britain and in the overseas Commands, North Africa, Italy, Middle East, Gibraltar, etc., as well as in India.

In each of the Commands there is a senior psychiatrist with a varying number of well trained men and women acting under his direction. They provide hospital and rehabilitation services, out-patient consultations and treatment. They undertake the psychiatric aspects of selection procedures and are involved in many matters of morale, problems of military training, etc. Military psychiatry demands much more than good clinical experience. Questions of disposal and matters of prognosis are constantly arising, and it is essential that the psychiatrists should understand intimately the life and work of the soldier with whom they are dealing, and that they should get "inside" the army.

In war, not only does the group matter more than the individual, but the lesser and more preventable diseases are vastly more important than the clinically more interesting, but much rarer, disorders. Psychosis is much less frequent and much less important from the point of view of winning the war than neurosis and the associated problems of lowered morale. In consequence much emphasis has been laid upon what might be called social psychiatry and especially upon the preventive mechanisms, of which selection is chief, and a special Directorate for the Selection of Personnel has been established under the Adjutant-General. Here large numbers of officers and sergeants with varying knowledge of industrial psychology are at work testing, interviewing and allocating personnel. The psychiatrists see those men who are thought to be in some way not quite normal and all who are backward in intelligence.

Selection, founded upon a thorough analysis of all the jobs to be done in the army and matching of men to those jobs on a basis of their quality, intelligence and specific aptitudes, has been an undoubted success. Not only has far greater efficiency resulted, but training has been better, sickness and delinquency have been reduced and morale has benefited.

In this technical team of psychologists,

personnel selection officers (regimental officers with special training) and psychiatrists, the latter play a relatively small part in the selection and allocation of large groups of men, but a different situation holds when one turns to the vital question of the selection of officers and other specialists. Where temperament, character and personality have to be assessed the psychiatrist plays a major part.

A technique has been devised for this procedure which will probably be of value after the war. The old method of selection by simple interview was not as successful as one would have liked. Battle experience, for example, was often lacking. Under the new methods candidates recommended for officer training come to the special Selection Board where they spend three days. They are seen under varying conditions of stress by trained combatant officers; they are given intelligence tests and are interviewed not only by senior officers but also, in the majority of cases, by the psychiatrist, who has, to aid him, the results of certain personality "pointers." A modification of Jung's word association test has been of great value. Parts of Murray's (Harvard) thematic apperception test are also used, and various other techniques provide a considerable amount of insight into the character and problems of the individual who is to be interviewed.

The techniques and principles of this work have been modified to help in the selection of men and women for other specialist tasks, also a considerable amount of research, validation and follow-up work is continuously carried on.

In this war there is practically no one who is not fully employed either in the services or in industry, and consequently the utilization of manpower is a vital matter. The army has been unable to reject all inferior and inadequate human material and to keep only that which is best. Both backward and neurotic men have to be used wherever possible, and in consequence much thought and effort have been given to devising the best methods of management of these particular groups. One example may be given—that of the very dull men with a mental age from 8 to 10 whom it is difficult to employ in any full combatant status. Our worst soldiers turn out to be our best laborers when properly grouped together under good officers and non-commissioned officers who understand them. From being problems to the ordinary army machine they become smart, keen and happy. They do extremely good work and, as a group have very low sick rates and very low crime rates—an illustration of how the sense of worth and competence at one's job produces high morale.

Neurotic men who have a long history of emotional and psychosomatic difficulties give good work when they are wisely placed with regard to occupation. War and its demands make it impossible to attempt thorough individual treatment save for some few key men of importance, and consequently great value has been found in special postings to particular jobs. By this means the men are set to work that interests them and for which they have the qualifications. Good service is thus obtained from them. Some, of course, have had to be discharged from the services and returned to industry.

The psychiatric hospitals in Great Britain have to deal with cases arising in the army under training and also with the psychiatric casualties returned from overseas. Psychotic breakdown has, on the whole, been rather less than had been anticipated and is distinctly less than the corresponding incidence in the same age groups in civil life. Insulin for schizophrenia and convulsion therapy for the depressive states have given very good results, and the average stay in hospital of the psychotics has been about 80 days.

The results of the treatment of true battle neurosis, where it has arisen in the line, have been satisfactory. Between 30 and 50 percent of such cases are got back to combatant duty with their units in four or five days. Sedation after abreaction with good rest for a day or two are sufficient to deal with many of these cases and very few of them need to leave the combat area, since even though not immediately fit to go back into the line they could be employed in other tasks.

Psychiatrists have undertaken many other interesting tasks during the war. Disciplinary procedures of the army have been thor-

oughly modernized and the psychiatric view point has been given adequate consideration. A very close and effective liaison exists between the legal authorities and the psychiatrists. The "battle inoculation" of troops in training by which they are introduced gradually to sounds and procedures of battle has proved to be of real value in preventing undue disturbance once they get into real fighting.

Many aspects of the maintenance of morale have shown themselves to be within the psychiatrist's sphere, and it is clear that he can be of the greatest help to combatant officers as an adviser on the manifold problems where human factors must be considered. Napoleon's dictum that "In war the spiritual is to the material as three is to one" is certainly true of modern warfare. It is probably true also of civil life.

THE PSYCHIATRIST LOOKS AT THE CHILD PSYCHIATRIST[1]

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Some may object to the term "child psychiatrist" but, after reading the controversy that has been going on in *Science* regarding the propriety of the substantive, I am emboldened to use the term. One critic writes objecting to the use of the term "horse serum" and claiming that "equine serum" is the proper term. After a free-for-all in which a number of scientists joined and in which some telling body blows were struck (or should I say "corporeal" blows?), one writer said the whole discussion deserved a good horse laugh and he defied anyone to say that it would be better to say "equine laugh." Finally one writer asked the complainant what he preferred to "corn" whiskey? So I feel that I have ample authority to use the term "child psychiatrist."

Specialization within specialties has developed to such a degree that it is perhaps time to re-examine their necessity and value. Medicine has many specialties. Psychiatry is generally accepted as one of them, although there are still some who insist that neuropsychiatry should constitute such a division and that psychiatry should not be split off from neurology as a specialty by itself. Within various specialties in medicine, we find still further specialties. The field of internal medicine is made up of many distinct groups—some men specializing in diseases of the heart and circulatory system, some in the endocrines, some in the gastrointestinal tract, etc. Surgery also has the neurosurgeon, the orthopedic surgeon, and many other groups. Psychiatry, likewise, has developed so that there are many in psychiatry who restrict themselves to a limited field. Some psychiatrists devote themselves exclusively to the problem of the feebleminded; others to the epileptic. Some concentrate on medico-legal problems and others are absorbed in the problems of mental hygiene of industry.

Psychoanalysis is generally accepted as one of these specialties within psychiatry, although the conflict still rages bitterly as to whether psychoanalysis belongs definitely in the field of medicine. Freud wrote a book on the problem of lay analysis, indicating his belief that psychoanalysis might be properly carried out by non-medical persons. Jung stated that lay individuals were often more competent to carry out psychoanalysis than were doctors of medicine. Alexander wrote, "Many psychoanalysts, in fact, question whether psychoanalysis should not be considered a distinctive discipline, related to medicine but essentially independent of it, ..." This would seem to indicate that there is some question as to whether psychoanalysis really is a part of the medical specialty of psychiatry, although there seems to be general agreement among psychiatrists, including many who are also psychoanalysts, that such is the case. I mention these differences of opinion, however, to show that there is still considerable room for the discussion of such matters.

Psychosomatic medicine is felt by some to be a specialty within psychiatry. By others it is felt to be an attitude of mind belonging to all other fields of medicine but representing an infiltration of the psychiatric approach to the problems of general medicine.

There has developed, during recent years, another field which has come to be regarded as one of the specialties of psychiatry, namely, child psychiatry. Here again there has been some controversy and we have had some who felt that the approach to behavior problems of children belonged to the field of pediatrics and that the person who should deal with these problems should be a pediatrician with some special training along psychiatric lines but not a psychiatrist. We have also had the establishment of some clinics for child guidance in which a psychologist has been the director and where the psychiatrist has been one of a number of consultants comparable to the pediatrician, the psychiatric social worker, and others. In general, however, the development of such work with children has come mainly from

[1] Address at the luncheon meeting sponsored by the Devereux Schools during the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 15-18, 1944.

psychiatrists, although there are many notable exceptions, and much valuable work in the study of the development of children and maladjustment of children has come from men like Gesell who are not generally thought of as belonging to the psychiatric group.

The work of the psychoanalytic school focused attention on the child. Freud's early theories of the cause of neuroses as being due to early psychic trauma of a sexual nature came from the accounts he received from adult patients. To quote from his paper on "The Psychoanalytic Movement"—"Influenced by Charcot's view of the traumatic origin of hysteria, one was readily inclined to accept as true and etiologically significant the statements made by patients in which they ascribed their symptoms to passive sexual experiences in early childhood—broadly speaking, to seduction. . . . . Analysis had led by the right paths back to these sexual traumas, and yet they were not true. At that time I would gladly have given up the whole thing, just as my esteemed predecessor, Breuer, had done when he made his unwelcome discovery." And a little later he says, "In the beginning my formulations regarding infantile sexuality were founded almost exclusively upon the results of analysis in adults, leading as they did back into the past. I had no opportunity of direct observations on children." It was not until 1909 that Freud published his paper, "Analysis of a Phobia in a Five-year-old Boy." Here we see the tendency, which was everywhere present in psychiatry, to study adults and, from accounts obtained from these adults regarding their childhood, to work out a theory of neuroses and to set up standards of normal and abnormal behavior in children. Fortunately this type of approach broke down before the obvious argument that, if one wanted to find out what the mental life of a child was like, one should study children and not adults. This fact was soon recognized in the psychoanalytic school and Jung's study of Anna, coming shortly after Freud's paper, emphasized the importance of the study of the actual child itself. It took some time, however, for such ideas to be accepted.

Probably the first real organized work along the lines of child psychiatry was undertaken by Healy in 1909 in Chicago. The general development of the mental hygiene movement in this country, the interesting cases studied and presented by Healy and Bronner, Campbell and others, led to a steadily growing interest in the problems of the mental health of the child. From the study of serious mental disorders and maladjustments in adult life, the opinion had been gradually developing that these conditions resulted, in part, from sensitizations and conditionings during childhood and that, if we were to develop better mental health in our adult population and decrease the incidence of mental disorders, we must do preventive work as early as possible. The late Dr. William A. White pointed out that childhood was the golden age for mental hygiene, and this saying received wide acceptance among the psychiatrists of America.

There was, therefore, this actual growing interest and development in child psychiatry which received a great impetus when, in 1922, The Commonwealth Fund established a child guidance clinic in New York City and made available fellowships in child psychiatry and psychiatric social work. In addition, The Commonwealth Fund sponsored the establishment of a full series of child guidance clinics throughout the country. The rapid development of psychiatric social work as a part of this whole movement also was of value in the movement. The National Committee for Mental Hygiene, under the guidance of Thomas W. Salmon and, later, Frankwood E. Williams, threw its energies into this movement and helped immensely to bring about the great development which occurred in child psychiatry during this period.

A standard plan for the child guidance clinic was then developed. Most clinics were set up independently, and were not associated with hospitals or with pediatric or psychiatric clinics. In fact, the medical approach was deliberately avoided as undesirable. Association with educational institutions occurred in some cases but, even here, the idea of the child guidance clinic as being something unique and as functioning better by itself seems to have largely prevailed.

The personnel consisted of psychiatrist,

psychologist and psychiatric social worker. While the role of each worker varied from clinic to clinic, the plan generally accepted has been that the psychiatrist was the head of the clinic and directed general policies as well as specific study and treatment. In actual cases, the psychiatrist examined and treated the child, the psychologist carried out various studies of the child designed to determine his intelligence and other qualities of his personality, while the social worker obtained the history, carried on treatment with the parents, conferred with other social agencies involved, and carried out necessary manipulation of the environment.

Many interesting variations of this set-up have been tried. Some clinics have been headed by a psychologist with the psychiatrist occupying a minor role. Usually such clinics have been closely connected with educational institutions. In still other clinics the psychiatric social worker has carried the burden of all treatment and the psychiatrist has been more of a consultant. The late Frankwood E. Williams envisioned a set-up in which a psychiatrist who was also a psychoanalyst would supervise the work of a group of psychiatric social workers, all of whom would also be psychoanalysts and who would carry out psychoanalytic treatment of child and parents as indicated. These variations of set-up can be looked upon as a healthy sign of growth in a new and developing discipline.

Various theories of causation and methods of treatment have been advocated. These have, to some extent, coincided with the current theories of psychiatry, but there has, in general, been more acceptance of the psychoanalytic formulations by child psychiatry than by psychiatry generally. As might be expected, there was great emphasis in the beginning on the sex life and development of the child. More recently one is struck by how infrequently sex is held to be the major cause and how aggressive tendencies, need of security, and need of affection are stressed.

In attempts to develop new theories, there has often been a tendency to over-simplify the problem and to assign a single factor as the cause of maladjustment. At the same time we find emphasis on causes which are exact opposites. So we hear about over-protection on the one hand and rejection on the other, or the under-privileged child and the over-privileged child. Actually, of course, this leads us to the idea that there is no one cause of childhood maladjustment and that too much or too little of most anything is bad.

In the early days it was rather generally held that the main cause of child maladjustment was to be found in the parents; hence treatment consisted largely of the social worker attempting to change parental attitudes. This formulation was and still is correct for some cases, but seems to be an example of attempting to make a theory explain all cases where it really had only limited application. At the other extreme, we have the elaborate study of the child under play technique and various other conditions with comparatively little attention to modifying the environment.

All this is said to point out the various trends in child psychiatry and not as criticism. Many new and valuable theories have developed from such work and nowhere in science do we find those making new discoveries able to take a comprehensive and unbiased attitude. Rather it is necessary to hammer at and over-emphasize a new idea in order to get it before others and the interest and enthusiasm behind such work commonly leads to over-emphasis. Only those coming later can sort out and evaluate the newer contributions. Child psychiatry has given us much of value not only for the study of the child but for all work in psychiatry. The time and effort spent by the many able investigators in this field have paid large dividends.

It is well to acknowledge these important contributions, but a paper devoted to nothing but praise would seem to have little point. Are there attitudes in child psychiatry which are not sound? What criticisms, both destructive and constructive, can one offer? The time available prevents any long or exhaustive discussion, but I would like to bring two questions before you.

First, is child psychiatry a specialty or does it really belong in the field of general clinical psychiatry? As has been pointed out, the maladjustment of a child is often

due to the maladjustment of parents. In such a case, the treatment is that of adult psychiatry. Unless the child psychiatrist then turns over the problem to someone else, he is in serious danger of advertising himself as a "specialist in the diseases of men, women and children." Yet, I believe most child psychiatrists would claim competence in such a case. However, many would hold that one psychiatrist should not see the child and one or both parents. This, again, has become a dictum which has been accepted without considering the possibilities that, in some cases, it may be best for one individual to see all persons concerned. For example, Obendorf has emphasized the importance of psychoanalyzing both husband and wife where maladjustments occur and insists that this psychoanalysis can best be carried out by one psychiatrist rather than having the two patients see two different psychoanalysts. If, therefore, we find that some psychiatrists are able to treat successfully two or more members of the family, should we not question whether the same is not true in at least some cases where children are concerned?

In some clinics children are considered as persons under 18 years of age. It hardly seems that one can make a clear distinction between child psychiatry and adult psychiatry with this age level and, if the child psychiatrist is prepared to treat all persons through adolescence and early adult life, then it seems that the child psychiatrist cannot function adequately without a fairly complete knowledge of adult psychiatry. If this is true, in what sense is he a specialist? The only problem he would seem to be unfit to treat would be that associated with geriatrics.

Second, is child psychiatry becoming crystallized and set so that certain formulations are now fixed? This is a common danger in all new developments. There is a period of vigorous growth followed by a set of fixed formulations. I remember, at the end of the last war, that Professor Rivers of Cambridge University came to this country and gave a talk on psychoanalysis before the New York Psychiatric Society. Professor Titchner of the psychology department of Cornell was present at this meeting. Rivers had emphasized the great value of psychoanalysis in giving a dynamic rather than a static approach. Titchner, in discussing this, pointed out that, although this was true, psychoanalysis was already becoming set in certain formulations. It had already devised terms for certain processes as had formal psychology, and he predicted that this would occur more and more as time went on and that psychoanalysis would have great difficulty in preventing such formulations from becoming static and falling into the difficulties which academic psychology had had. Recent controversies in psychoanalysis suggest that there is some basis for Titchner's views.

As examples of this tendency in child psychiatry, I would mention only two. A great many child guidance clinics start with the invariable dictum that a child is not to appear before a conference. There can be no question, of course, of the harmful effect on some children of appearing before a conference. However, it seems to me that this attitude has gained altogether too much importance in child psychiatry and that, in the eyes of many child psychiatrists, although there is vigorous protest on the part of some, it has become a shibboleth. I would even go so far as to suggest that in some cases psychiatric over-protection has been substituted for maternal over-protection. This idea is based on protecting the child, that it will be a harmful experience to the child. It seems to me that there is a confusion of thought here between the terms "mentally upsetting" and "harmful," and the idea that anything that upsets a person emotionally or is unpleasant to the individual is necessarily harmful. Examination and treatment in all fields of medicine are often painful to the patient, but the good derived from these procedures is so great that no one questions the necessity of them. If child psychiatry is a field of medicine, then we find it starting with a fundamental concept which is opposed to the teaching of other fields of medicine, namely, the idea that teaching and treatment of patients can be carried on adequately without these patients ever coming before a group. I would challenge the idea of a diagnosis being made without seeing the patient. This is a fundamental principle in medicine

and yet it is one disregarded by many child guidance clinics. No amount of description can replace the actual observation of the child, and the child may behave in different fashion under different circumstances. The way he reacts before a clinic may determine the diagnosis and the treatment. For example, a child regarded as a serious behavior problem may show before the group a lack of affect and an inappropriate attitude which immediately suggests an early case of schizophrenia. My own experience leads me to believe that many early cases of schizophrenia are not diagnosed largely for this reason. They are seen mainly by persons who have had quite limited training and experience in dealing with the more serious types of mental disorder and, on the basis of the record, there is nothing to suggest a serious mental disorder.

Furthermore, the coming before a group may, in certain cases, build up in the mind of a child the idea that his condition is a perfectly ordinary thing which is being seen hundreds of times by the doctors and other specialists, and may even result in desensitizing him. Many times excellent therapy can be carried out on a patient before a group. The late C. Macfie Campbell was an adept at this. Often he would have a patient sitting beside him on a platform before a group of psychiatrists, medical students, nurses and social workers, and would proceed to discuss the problems of the patient before the group, apparently disregarding the patient. He would bring out the problems of the patient, discuss how people dealt with such problems, and perhaps end up with a discussion as to the possibilities of the patient's adjusting to this situation. This was all done indirectly, and often disarmed the patient completely and allowed him to sit as a listener and student rather than as one being exposed to criticism. The resistance of the patient to many ideas was overcome by such a process where they would have been awakened by a direct attack. The whole principle of group therapy is based on the idea that the presence of others is not only not necessarily harmful in the discussion of a patient's problems, but often beneficial.

A second danger of becoming rigid and stereotyped is the insistence upon the invariable combination of psychiatrist, psychologist and psychiatric social worker. Most of the child guidance clinics have developed away from hospitals. Yet in certain hospital settings there has developed work with children where special wards are available. As one illustration, I would cite the development at Bellevue Hospital where we were able to build up a 50-bed ward for children under 12 years of age, a 50-bed ward for adolescent boys between the ages of 12 and 16, and a 25-bed ward for adolescent girls between the ages of 12 and 16. The psychiatrists in charge of these wards were exceedingly competent and some of them would certainly rank among the best qualified child psychiatrists in this country. Yet recognition of this set-up as a training center was refused because there was not a properly qualified full-time psychiatric social worker available. Nevertheless, here was a clinic, both outpatient and house, to which the most serious behavior problems in New York City were referred for diagnosis, treatment and disposition. If the school clinics of New York City had a case that was too much for them, it was promptly sent to Bellevue. If the psychiatrists at the Children's Court of New York City had particularly complicated or difficult problems, they also were sent to Bellevue. Because of the rigid attitude of a few, recognition of this set-up as a qualified child guidance clinic and training place for child psychiatrists was refused. Furthermore, when the City of New York established outpatient clinics at Kings County, Queens General Hospital, and Morrisania Hospital, and some of the same psychiatrists and psychologists were assigned there, these clinics were immediately accepted because an adequate number of qualified psychiatric social workers were attached.

The child guidance clinics have largely kept away from hospitals. More recently we see a trend toward returning this set-up to the more medical atmosphere and, in our best medical schools and teaching centers, we have establishment of the child psychiatrist both in outpatient and house conditions. This is something, I think, which should be brought about still more, and it is my feeling that, in general, child psychiatry can be done best in a medical atmosphere rather than in

one that is educational. There are those who have felt that it should be divorced from hospitals, that children will not come there. Experience has shown that psychiatric clinics for children attached too closely to the school system often suffer from political and other pressure, and that certain things cannot be done there which can be done in the hospital setting. It has been found, in some places, that any attempt to work through sex problems with children, where the set-up is attached to the school system, is impossible; whereas, in the same city, a psychiatric clinic for children, attached to a hospital and in a medical atmosphere, can approach these same problems without any criticism or without anyone being stirred up by it.

In conclusion, I would point out that child psychiatry has made enormous strides during the last 20 years, has given us a much greater understanding of the causes of maladjustment among children and of the way in which personality develops. It has also devised techniques for treatment which are of the greatest value. There will always be those who will wish to concentrate on working with children, but it seems to me that it is best for all of us not to develop a rigid division between child psychiatry and adult psychiatry. Every bit of information and every technique which child psychiatry has learned is of importance to adult psychiatry, and the converse of this proposition is also true. All those going into general psychiatry should have a certain amount of training with children, and there is no question but that those working with children should have suitable training experience with adults. It would seem, therefore, that child psychiatry hardly remains a true specialty in the ordinary sense of the word, but there will always be those who have had particular training and experience in child psychiatry and who are interested in concentrating in that field. I do not believe, however, that those working in general psychiatry should throw up their hands whenever the case of a child comes up and say that only a child psychiatrist can deal with such a situation. This to me indicates a type of specialization which is not desirable. There is so much overlapping between adult and child psychiatry that everyone must have familiarity with both. In dealing with adults, the problems of their children come up and may be important factors in the adult situation. Under such circumstances I do not feel that one should always have to call in a child psychiatrist but that we should think of certain individuals who have concentrated in work with children and are unusually adept and skillful. If we wish to call them specialists, well and good.

Child psychiatry has made great contributions because it has remained plastic and adaptable, ready to try out new methods that offered some chance of adding to our knowledge. There is some danger of its becoming fixed and static. Even where certain techniques are generally used and have established themselves, there should still be enough plasticity to allow procedures to vary at times.

It is my feeling that child psychiatry is getting back closer to medicine and general psychiatry, and that this is good both for child psychiatry and the rest of medicine. I believe that more and more we should have psychiatric set-ups for children in general hospitals and in psychiatric hospitals. Not only should the outpatient facilities be increased, but more wards for children should be built. However, it is to be hoped that we will not be confronted with the situation which prevails in a number of localities where most excellent psychiatric wards for children have been built but have remained idle for years. Examples that might be cited are the children's ward at the Neuropsychiatric Institute of the University of Michigan which, I believe, has remained empty ever since the building was completed so that for years this excellent set-up for studying children has remained idle because the legislature of the State of Michigan has not seen fit to appropriate sufficient money to staff the children's ward; and the children's ward at the Payne Whitney Clinic in New York, this ward having been empty for something over 10 years. At The Langley Porter Clinic we have not yet opened our children's ward due to the fact that we cannot secure nurses, but expect to do so as soon as nurses are available. Here it is purely a war emergency. However, with suitable facilities remaining vacant over the years, it does seem that we

should exert pressure wherever necessary to see that something is done to make use of such excellent facilities to further the study of psychiatric problems in children. If this is done we shall find, I believe, a further increase in the valuable work of child psychiatry and a closer linking up of the simple behavior problems of children with the early and serious types of mental disorders. Such further studies are badly needed and will make a most important contribution to this field.

THE RÔLE OF X-RAY IN THE STUDY OF LOCAL ATROPHIC LESIONS OF THE BRAIN[1]

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Elaborate studies have been made of encephalography in post-traumatic epilepsy but the significant features of simple radiographs have often been overlooked. It has seemed worth while to describe the rôle of the x-ray in the complete analysis of cases of epilepsy due to atrophic lesions. In any such case skull asymmetry or changes in the cranial vault may sometimes provide a valuable clue to the cause of attacks.

The following discussion is based on a review of the findings in 142 cases of focal epilepsy which came to operation[2] in the Montreal Neurological Institute, and a review of the head injuries which passed through the No. 1 Canadian Neurological Hospital in England during 1940 and 1941.[3] The radiographs of the Montreal cases have all been reviewed and correlated with the findings at operation. Expanding lesions are excluded from this paper, our attention at the present being confined to atrophic lesions.

Plain Radiographs

The first step in the roentgenographic examination of a patient suspected of having a local atrophic cerebral lesion should consist of plain films of the skull: stereoscopic lateral views and, preferably, stereoscopic anteroposterior views, as well as at least one posteroanterior film. Special projections are sometimes indicated. The use of stereoscopic examinations is stressed as it is felt that in many instances minor abnormalities will be noted by this method which might otherwise be missed. It is also very important to have films that are truly lateral and truly anteroposterior, for rotation can produce many false impressions. Not until all the information that can be obtained from plain radiographs has been exhausted, should encephalography, ventriculography or arteriography be employed.

Although plain radiographs of such patients may often reveal no significant abnormality, the contrary may be the case especially in individuals who have suffered from brain damage at birth or during the first year or so of life.

If the brain damage has been extreme, the skull may be small and premature closure of the sutures may occur with a greater or lesser degree of microcephaly. By far the more interesting and significant abnormalities are encountered in those patients in whom the brain damage is predominantly unilateral. If there is lack of development of a portion or all of one cerebral hemisphere it is now known that the corresponding side of the cranium may be smaller than the opposite side(1, 2). This will be accompanied by smallness of the opposite arm and leg in certain cases when the postcentral gyrus is involved(3).

Enlargement of the frontal and ethmoid sinuses and mastoid air cells on the small side of the cranium is apt to occur, as well as thickening of the vault (Fig. 1). All these phenomena are due to the lack of stimulus from a normally growing brain in this half of the skull. It should be emphasized that such changes will not occur following brain damage which originates later on in life—the insult must of necessity be early.

Sometimes the asymmetry is so striking that measurements are quite unnecessary, but often when it is of small degree it is necessary to make a tracing of the skull on thin paper which can be folded over at the anatomical midline and viewed by transmitted light. When the sagittal suture has closed it may be difficult to determine the

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[1] Read at the ninety-ninth annual meeting of The American Psychiatric Association, Detroit, Michigan, May 10-13, 1943.

From the Department of Neurology and Neurosurgery, McGill University and the Montreal Neurological Institute.

[2] Operations by Wilder Penfield.

[3] A. E. Childe was radiologist in charge at this hospital.

true midline but usually this can be recognized accurately enough for practical purposes and, inferiorly, the crista galli or midline of the nose indicates its location. If there is any significant rotation in the radiographs the patient should be re-examined. Atrophic lesions of the occipital lobe tend to produce less obvious cranial asymmetry than lesions situated further forward.

Fractures which take place early in life usually disappear rapidly and completely, so that even if depression has originally been present the signs may not be evident some years later. Fractures in older individuals heal more slowly but unless there has been much separation or depression, these too tend to disappear. It is likely that when dura is caught between the edges of the crack the fracture remains open. This probably explains why many fractures close rapidly and well but why an occasional fracture remains open for years or throughout life.

Deficiency of the dura which may result from severe head injury occasionally produces interesting radiographic changes. The brain is then in direct contact with the inner table of the skull.[4] Peculiarly enough the pressure of the soft brain tends to erode the bone with the formation of small pits and there is also apt to be new bone formation resembling stalactites projecting a few mm. into the cranium(4). In such cases meningocerebral cicatrices are to be expected and this type of irregularity of the skull may well indicate the site of an epileptogenic focus. This characteristic appearance of erosion of the skull associated with defective dura may appear following injury at any age.

When a depressed fracture occurs after infancy the amount of depression can be estimated with stereoscopic films and, more accurately, with films taken tangential to the area in question. Depressed bone fragments may be shown either attached to adjacent nondepressed bone or more deeply situated within the cranium. In the case of war injuries metallic or non-metallic foreign bodies should be carefully sought. As the result of bomb explosion fragments of glass, plaster and brick are commonly driven into wounds, as well as hair and other types of debris.

All these various foreign bodies increase the likelihood of brain abscess or late epilepsy. Brick and glass can be recognized but may be erroneously interpreted as bone fragments. It should be remembered that skull films of individuals who have suffered from fractures and later developed epilepsy may well appear to be quite negative, the fractures having disappeared. Even if there is a persistent fracture, subsequent investigation may show that the true focus of the seizures is in the cerebrum at a distance.

Calcification in the internal carotid arteries may offer suggestive evidence of arteriosclerosis, but it does not conclusively exclude other significant lesions. The situation of a calcified pineal gland in atrophic lesions of the brain is usually found to be normal and in most instances its recognition is only of importance in order to exclude an expanding lesion, for of course there is nothing to prevent the development of a brain tumor in an individual who has previously suffered from a head injury. Many tumors, even when small but located in a strategically important position, will produce epilepsy, especially if they are of a slowly growing type.

Calcification within the substance of either cerebral hemisphere, in distinction to that so commonly observed in the pineal, choroid plexuses, falx, etc., usually indicates the site of a tumor and need not be considered here. However, there are exceptions to this and several cases have been encountered in which calcification occurred in degenerative atrophic lesions with resulting focal epilepsy. It is also possible for tuberculomas to shrivel and calcify and become contracting cerebral cicatrices. In most instances it is impossible to recognize the histological nature of such a lesion from the type of intracranial calcification present, but occasionally a presumptive diagnosis of tuberculoma can be made when the presence of another tuberculous lesion elsewhere in the body can be established. In the last year or two it has been possible to recognize toxoplasmosis associated with epilepsy by means of the characteristic scattered points of calcification. This should be verified by examination of

[4] It may well be that pia mater is also deficient although this is difficult to decide at the operating table.

the eyes and of the blood for the serological reactions(5, 6). The type of intracranial calcification, described by Weber, associated with a facial nævus and vascular changes in the same eye, is usually quite characteristic (7). It tends to occur in wavy folds and is occasionally of extreme degree, Geyelin and Penfield have reported a family of a father and his four children all of whom had intracranial calcification and suffered from epilepsy(8).

Cerebral Pneumography

No patient with focal epilepsy has been studied completely until an encephalogram or ventriculogram has been performed. In the vast majority of cases of local atrophic lesions of the brain it is not only safe but also wise to use encephalography instead of ventriculography. Occasionally the ventricular system cannot be filled by encephalography and it is usually much more difficult to fill small ventricles satisfactorily than larger ones. Encephalography has the added advantage of filling the subarachnoid space, which is often of the greatest value, as ventricular deformity or the lack of it is by no means the complete picture in the pneumographic analysis of an epileptic case.

Whatever the technique used, it is of the utmost importance to visualize the entire ventricular system. At the risk of criticism, we have avoided taking upright films except in very rare instances. The use of stereoscopic films is considered essential as it is only by this means that the position of the various gas-filled spaces can be accurately determined. We have also advocated lateral films with the brow up taken without moving the patient immediately following the ordinary A-P films and lateral films with the occiput up taken immediately after the P-A films. These lateral examinations not only ensure complete drainage of the anterior and posterior portions of the ventricles and enable them to be compared, but they also show if there is inequality in the amount of filling of the two lateral ventricles. This is important for it is easy to mistake more complete filling of the one ventricle for a localized enlargement. Our routine encephalogram consists of twelve films, the last four being ordinary stereoscopic right and left laterals, with the patient in the horizontal position. These latter are primarily expected to visualize the temporal horns and the patient's head is carefully rotated before each lateral examination is made to ensure that most of the gas is in the uppermost ventricle and also to make certain that it fills the temporal horn. Care must be taken during this procedure to keep the aqueduct of Sylvius on a slight slant to prevent shaking the gas out of the ventricles into the subarachnoid space.

No hard and fast definition of the size of normal ventricles can be laid down, and it is evident that there is considerable normal variation. In general the ventricles are comparatively small in the normal young individual, but they gradually increase in size from the age of about 25 years so that at 60 they are very much larger(4). This normal increase with age bears no significant relationship to mental capacity. Even with the best filling possible no abnormality may be found in the encephalograms of a certain percentage of patients with focal epilepsy. It is quite possible for a small neoplasm to be present and to be missed entirely, even when the films are subsequently reviewed and the size and site are known. This is also true of some focal atrophic lesions, especially when associated with a small closed cyst. Nevertheless when the encephalogram is normal the probability is that exploratory craniotomy, if undertaken, will prove negative and that the surgeon will close without excision.

A good deal of ventricular enlargement is almost a routine finding after any serious head injury and this too is not necessarily of any serious significance, the loss of cerebral volume taking place as in obstructive hydrocephalus at the expense of the white matter, where certain neurone collaterals probably disappear(9, 10). Localized enlargement of a portion of the lateral ventricles is much more significant. Such a focal enlargement may be found in an individual who does not suffer from epilepsy, but if he does have focal seizures the lesion which is responsible will often lie somewhere in the neighborhood of that portion of the lateral ventricle which is most markedly dilated. Usually such a lesion will be directly superficial to the point of maximum enlargement of the ventricle but this is not necessarily the case.

It is not uncommon to find that a very considerable portion of one lateral ventricle is enlarged and sometimes there will be general enlargement of all of one ventricle. In cases such as these it is possible to lateralize the focus but one is usually not able to diagnose the exact site of the discharging focus. It may be more accurately localized by clinical means and electroencephalography, but very often it is not until craniotomy has been performed, the brain inspected and stimulation carried out that a completely accurate diagnosis of the site can be made. Fortunately this is not necessarily a serious handicap, as if the general region is known it is quite possible to turn down a rather large bone flap which will allow a careful examination of all the brain under suspicion.

Epilepsy may follow the healing of a brain abscess, sometimes a number of years after the abscess has disappeared. Encephalography usually reveals some degree of general enlargement of the ventricles and it also usually shows localized ventricular dilatation in the neighborhood of the original abscess. Associated with this there is apt to be obliteration of the subarachnoid space in the involved area. This latter finding may also be found occasionally after head injuries.

Following injuries or, more commonly, vascular accidents occurring early in life, extreme localized enlargement of a portion of a lateral ventricle may occur, so that the overlying brain for all practical purposes completely disappears. This is somewhat more common in the occipital region. In such cases the epileptic focus usually proves to be at the periphery of the area of major atrophy rather than over the destroyed area. In other cases the outward bulging of the ventricle may be somewhat less marked so that a moderately thick layer of brain is present between the dilated ventricle and the arachnoid. Here too the focus may be peripheral rather than in the brain directly superficial to the atrophic area. Sometimes the ventricles may be comparatively normal and there may be exaggerated subarachnoid markings situated locally over the cerebral hemisphere near the epileptic focus.

Occasionally a very prominent area of focal cortical atrophy (cyst formation) may be visualized. Unfortunately not all cysts communicate freely enough with the subarachnoid space to be demonstrated by encephalography. The use of stereoscopic films is especially valuable in this connection, for many errors in interpretation are possible from the inspection of single films. The cisterna ambiens may closely resemble an area of atrophy in one or other parietal lobe or trapped gas in the lowermost temporal horn may simulate atrophy of the other temporal lobe.

The encephalographic appearance of certain expanding lesions occasionally resembles focal atrophy. This is much more commonly seen in slowly growing vascular neoplasms or arteriovenous aneurisms. In such cases it is logical to assume that the blood supply of the brain is seriously impaired locally. It is possible also that constant pulsation of the vessels produces local atrophy of the brain. The encephalogram may show nothing but the resultant atrophy, without any shift of the ventricle away from it, and there may even be a local enlargement of the ventricle toward it. In many such instances the use of the stethoscope will discover the presence of a bruit and point to the real underlying abnormality.

Cerebral Arteriography

This method of investigation is indicated in certain cases in which arteriovenous aneurisms and racemose hemangiomas are suspected. A more exact localization and sometimes a pathological diagnosis may thus be possible. If the lesion proves to be vascular in nature its blood supply is demonstrated which greatly facilitates surgical therapy. It is felt, however, that the use of this procedure should be avoided as much as possible until some more satisfactory contrast medium is available. Thorotrast is radioactive and should not be used in young individuals unless the need is urgent. All other available contrast media also have serious contraindications.

Pathological and Roentgenographic Correlation

Focal microgyria may be defined as a localized area of small gyri. Several narrow leathery gyri may be crowded together in the space that should be occupied by one or

two normal sized gyri. This is evidently due to compression and decrease in circulation of these gyri during the passage of the head through the birth canal. During the first year of life, the adjacent normal gyri crowd in on the area, due to the rapid growth of the infant brain, and the ventricle preserves a shape that is nearly normal in outline(2).

Thus focal microgyria produces a small cranium on the side of the lesion because the volume of growing brain is smaller on that side (Fig. 2). There may also be enlargement of the frontal sinuses and mastoid cells on the side of the small hemisphere, as though these air cells would attempt to bring the skull back to normal size. The ventricles may show a small amount of enlargement at the site of microgyria.

Closure of a cerebral artery that dates from birth or from some prenatal condition results in complete local destruction of brain, and thus extreme enlargement of the ventricle at the site of the lesion. This is much less apt to produce cranial smallness.

Thus, cranial asymmetry due to smallness of one cranial half is usually attributable to loss of cerebral tissue as the result of traumatic injury or local ischæmia which results in only partial brain destruction. Such lesions are often the source of focal epilepsy. On the other hand, when the ventricle enlarges greatly there may be no cranial asymmetry.

When a meningocerebral scar occurs in one cerebral hemisphere after the period of rapid skull growth there may result a shift of the septum pellucidum and third ventricle toward the side of the lesion(11). Associated with this there will very frequently be a localized enlargement of the lateral ventricle in the vicinity of the scar. Sometimes this ventricular enlargement is the predominant feature and an appreciable shift does not occur and sometimes the shift and ventricular enlargement are modified or prevented by intracerebral or subarachnoid collections of fluid or porencephaly (Fig. 3).

Cerebral atrophy, if localized, may produce almost identical encephalographic findings to those encountered in a meningocerebral scar. Here too a shift of the midline structures may be modified by the same factors. Occasionally there will be obvious local cortical brain atrophy, sometimes associated with large superficial collections of subarachnoid fluid. Severe head injury almost always produces some general increase in size of all portions of the lateral ventricles and very often of the third ventricle. There may also be widening and deepening of the subarachnoid markings.

With an arteriovenous varix there is a combination of an expansile and an atrophic process. Careful scrutiny will sometimes show a rounded filling defect in the middle of an atrophic lesion, but in some instances only the atrophy will be visible. Thus the presence of a closed cyst is often not suspected. In general, atrophy may result in, (a) local ventricular enlargement, (b) porencephaly, (c) focal enlargement of subarachnoid spaces, or (d) intracerebral cyst formation.

Epilepsy does not seem to be caused by internal hydrocephalus, even though the ventricular enlargement be extreme.

The presence of a defect in the dura, as indicated by irregularity and pitting of the inner table of the skull and stalactite formation, gives evidence of tearing in this region but it does not necessarily indicate the exact site of the epileptic focus (Fig. 4).

Summary and Conclusions

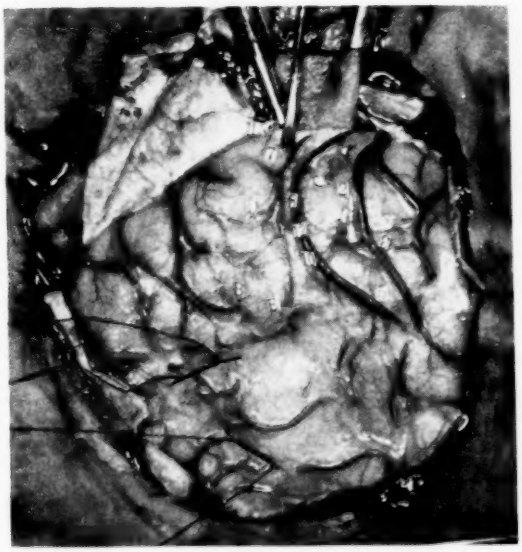
Unilateral atrophic cerebral lesions occurring early in life frequently produce cranial asymmetry that may easily be detected in plain skull radiographs. This asymmetry consists in ipsilateral decrease in size of the cranial chamber and often increased size of the paranasal sinuses and mastoid air cells. Such examinations should never be omitted in the study of the epileptic patient.

In many cases of posttraumatic epilepsy ordinary skull radiographs reveal no localizing information but tears and deficiencies of the dura tend to produce characteristic changes and occasionally point out the exact site of a previous skull injury.

Carefully performed encephalography should be undertaken in almost all cases in which focal cerebral atrophy is suspected. The general region where the epileptogenic lesion will be found is frequently shown by this method. Occasionally a focal atrophic lesion may be present although encepha-

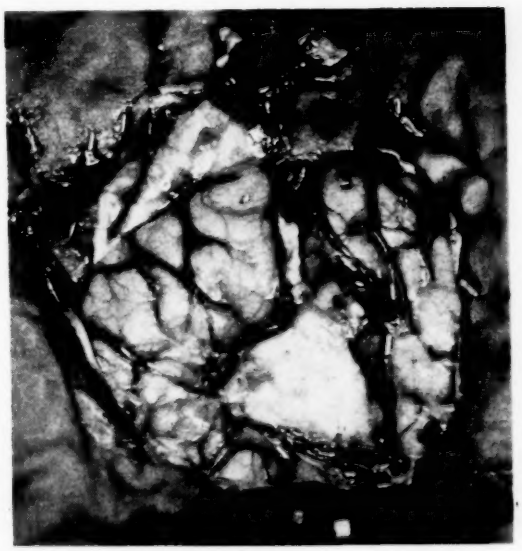
A

A. The right hemicranium is small and the right frontal sinus overdeveloped. There is also some enlargement of the right mastoid air cells.



B

B. Photograph made at operation showing gelatinoid scar which has replaced cortex.



C

C. Same case after removal of scar leaving adjacent gyri covered with pia.

FIG. 1.—A. J., aged 13 years. Birth injury with spastic left arm and leg and seizures starting in left arm.

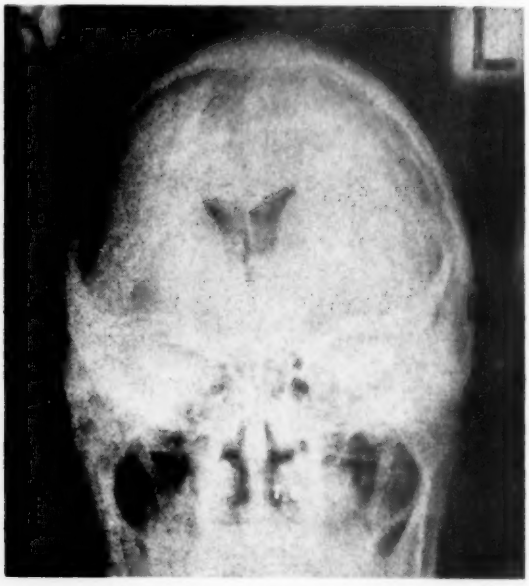
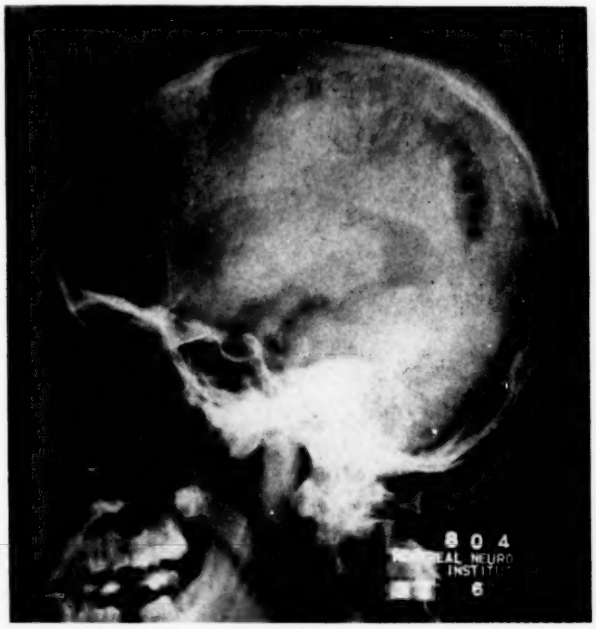


FIG. 2.—W. K., aged 18 years. History of difficult birth with asphyxia and twitching. Convulsions have occurred for 3 years.

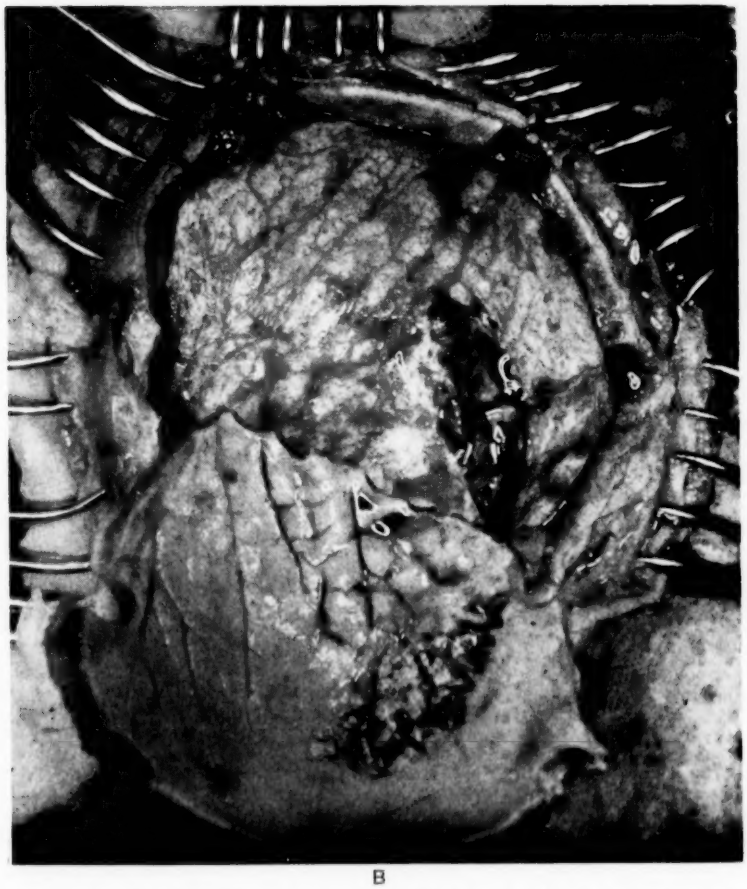
There is very marked diminution in volume of the right hemicranium, but the right lateral ventricle is not very strikingly enlarged. Operation revealed marked right-sided microgyria.

FIG. 3.—J. B., aged 18 years. Convulsive seizures and hemiparesis due to birth injury.

Very little cranial asymmetry is present and the ventricular system is only slightly shifted to the left. The left lateral ventricle is moderately enlarged and there is a large porencephalic cyst of the left cerebral hemisphere.



A



B

FIG. 4.—P. R., aged 19. History of fall down stairs at age of 4 mos.

A. There is pronounced thinning of the posterior part of the left parietal bone and the bone in this region is irregular. Only slight ventricular enlargement is present.

B. Photograph made at operation showing the defect in the dura and corresponding roughening of the undersurface of the skull.

lography is negative. This is rare and usually a normal encephalogram is a strong contraindication to craniotomy unless the other evidence available is very convincing.

The exact site of a focal epileptic lesion can usually not be determined by radiographic examinations alone, although the general region can be ascertained in most instances. Careful correlation of the clinical, electrographic and radiographic findings is essential.

Cerebral arteriography is occasionally a helpful procedure in the diagnosis of focal epilepsy, particularly when aneurism or hemangioma is suspected.

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OBSERVATIONS ON THE PATTERNS OF ANXIETY[1]

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This paper deals with certain of the patterns into which the complaints of patients suffering from tension or anxiety states may fall.

The amount of work done in this field is limited. It is true that an illuminating description of the physiological reactions to fear in animals has been recorded by Cannon, that many of the psychosomatic responses in human subjects have been studied and reported (Brunswick, 1924; Fahrenkamp, 1926; Dobreff and Tomoff, 1932; Flanders-Dunbar, 1938) and that Jacobsen, 1938 has investigated the part played by tension in certain psychoneurotic states. Apart from these somatic studies, psychiatric workers with few exceptions (Kozol, 1940) have been almost exclusively concerned with working out the dynamics of certain limited aspects of anxiety. This preoccupation has resulted in failure to develop an adequate description of the full range of anxiety reactions. Considerable areas of the total reaction which the patient shows are ignored and the therapeutic approach is narrowed to a degree which may render it ineffective.

Procedure.—This study is concerned with the description of patterns of complaints made and signs exhibited by a series of patients suffering from various forms of chronic tension and anxiety. No attempt has been made to fit these simple statements into any pre-existing theoretical framework. To do so seemed to run the risk of destroying their meaning and obscuring their relations to other aspects of the behavior of the individual.

The material was assembled by the interview method to which was added a physical examination. In certain cases a dictaphone record was taken. The cases consisted of patients suffering from tensional and anxiety states. Those showing symptoms of other reaction types, including agitated depression, were excluded. There were 47 patients, 20 being men. The ages ranged from 20 to 58. Thirty-two were below the age of 40.

Results.—Preliminary inspection of the material suggested certain questions. First, do the reactions of the patients tend to fall into any meaningful patterns? Second, do the present anxiety responses show any relation to those responses which the patient customarily showed before his illness when faced with a trying situation.

Further consideration of the data showed that the cases tended to sort themselves out into: I. Those in whom the skeletal musculature was mainly involved; II. Those in whom the smooth musculature was the main participant in the anxiety reaction (in the latter group, several subdivisions could be recognized depending upon whether the cardiovascular or gastro-intestinal or other functions were mainly involved); III. Those in whom skeletal and smooth musculature appeared to be equally involved.

TABLE I

SKELETAL MUSCLE PATTERN

SIMPLE INCREASE IN TENSION

1. Increased tendon reflexes.	3. Tremor:
2. Occasional transitory knee and ankle clonus.	a. Hands. b. Closed eyelids. c. Knees. d. Internal.

The fundamental basis of all somatic complaints or signs found in the skeletal muscle pattern is an increase in the skeletal muscle tonus. This results in a number of basic symptoms and signs which are shown in Table I. The following points concerning these are of interest. The increase in the tendon reflexes is almost invariably greater in the lower extremities than in the upper. We have no explanation of this. "Internal tremor" is a quite frequent complaint where the anxiety is of moderate severity. It is usually described by the patient as within the chest or abdominal cavities. Often it is present without external tremor being ap-

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parent. It is possible that it represents an involvement of the large muscle groups lying parallel to the vertebral column.

The next groups of complaints found in this pattern are simple derivatives of those already mentioned. (Table II.) The complaints of fatigue are usually generalized though on occasion the patients will complain of fatigue mainly in one or two areas, particularly around the eyes. It seems reasonable to consider that the fatigue is ascribable to increased energy expenditure in consequence of prolonged muscle tonus.

The stiffness of which many patients complain assumed in a few cases a monosymptomatic form, *i.e.*, the patients came complaining of stiffness of the neck or of the jaws and that alone. It was only after careful questioning that it was apparent that there was a general increase in tension. Some of the complaints were graphic, one patient saying that her face felt as though it was frozen and another saying it felt as though an astringent had been rubbed into it.

TABLE II

SKELETAL MUSCLE PATTERN

SIMPLE DERIVATIVES

1. Fatigue.
2. Weakness.
3. Stiffness:
   a. Face.
   b. Hands.
   c. Neck.
   d. General.
4. Drawing sensations.
5. Aching:
   a. Neck.
   b. Head.
6. Head pressure.
7. Head constriction.

The drawing sensations are almost always found in the head or shoulder, much less frequently in the legs. This complaint is of particular interest in that it has been given a central position in the concept of hypochrondriasis by those who postulate the latter as a separate reaction type. These drawing sensations seem very definitely part of the skeletal-muscle pattern. They increase and decrease in severity in the same measure as do the other symptoms. The last three symptoms in this category are clearly related —aching, head pressure and head constriction. The aching is most commonly found in the region of the neck and tends to pass into the occipital region. It often extends over the rest of the skull in the form of a headache which is not influenced by postural change. Feelings of pressure on the vertex and feelings of constriction are quite common and are localized mainly in the frontal and parietal regions. It is conjectured that these sensations are derived from prolonged increase in tonus of the skeletal musculature.

The complex derivatives include a considerable range of symptoms. (Table III.) Clumsiness of the hands is quite often mentioned and the patient refers to the frequency with which he drops things or less often to the change in his hand-writing. Clumsiness of the feet is less frequently reported. This is of interest in view of the fact that hyperreflexia is more severe in the lower extremities than in the upper. The explanation may lie in the fact that the movements carried out by the lower extremities are less finely differentiated. Patients, however, have reported that they make missteps and that they tend to scuff their feet when tense. One patient reported that her friends could always tell when she was upset by the sound of her footsteps.

TABLE III

SKELETAL MUSCLE PATTERN

COMPLEX DERIVATIVES

1. Clumsiness of hands.
2. Clumsiness of feet.
3. Falling dreams.
4. Jerking of limbs on going to sleep.
5. Facial tics.
6. Unsteadiness of voice.
7. Stuttering.
8. Tightening of throat.
9. "Weaving."
10. Inability to move.
11. Clicking and ringing in ears.
12. Blurring of vision.
13. Teeth grinding.

Falling dreams and jerking of the limbs, particularly of the lower extremities on going to sleep are found in normal individuals but in tense and anxious persons their incidence is increased.

Facial tics of all ranges of complexity may be found in persons showing the skeletal muscle type of anxiety pattern. The simplest form is the twitching of a few fasciculi. Next in order comes the rather explosive type of blinking. Here not only do the eyelids move but a considerable part of the circumocular musculature also takes part in the act of blinking.

An important group of complaints is centered around the function of phonation. Un-

steadiness of voice during periods of tension is frequently mentioned. It is of interest in this connection to note that it has been reported that the frequency of the voice vibrato has been found to coincide with that of the tremor present in the respiratory musculature (Waterman, 1941). In more severe forms of tension, a feeling of constriction of the throat is noted. A number of patients stated that they stammer during the period when they are the most anxious. This latter observation of course ties in with the frequently reported fact that stammerers tend to be tense individuals. The question presents itself as to whether it might not be therapeutically profitable to regard stammerers as chronically tense individuals in whom, for additional reasons, this particular symptom has been accentuated.

"Weaving" is a complaint frequently made by these patients. This consists in a feeling of unsteadiness usually present only when standing but in more severe cases present when sitting down. A number of patients feel that they tend actually to sway. Others state that they have to hold on to neighboring objects when experiencing this symptom. One patient could not go hunting because while steady on flat ground, he felt very insecure when walking across the slope of a hill. Another stated he had to be careful not to turn around rapidly. On close inspection, these patients do appear to show rather more postural sway than the normal individual, but the severity of this appears to be less than the intensity of their experience. This complaint should be considered in relation to the continuous accentuated sway which is at times observable in more extreme forms of anxiety such as the agitated depressions. Very little is known about postural sway. That it does serve a purpose in the economy of the organism is indicated by the studies of Franseen and Hellebrandt (1943) who have shown that abolition of postural sway results in a considerable increase of respiratory exchange and in some instances in syncope.

In contrast to this symptom of weaving, there are a few reports of inability to move at all during periods of tension.

Clicking and ringing sounds in the ears are quite common. Several of the patients in this series had been under treatment for this complaint, quite unsuccessfully, by ear specialists. While some of these complaints may be due to the hypersensitivity which is quite often found in these patients, in several instances careful investigation showed that the complaints continued when the patient was not otherwise conscious of being hypersensitive. It seems probable that the clicking sounds may be ascribed to the increased tonus of the muscles controlling the ossicles or the eustachian tubes. Many patients complain of blurring of vision during periods of anxiety. This blurring affects near vision almost exclusively. This suggests it is muscular in origin. Unfortunately, a hypothesis that it may be due to increased tonus of the ciliaris muscle is untenable, since contraction of that muscle relieves tension on the suspensory ligament of the lens and permits the latter to assume the more spherical form required for near vision. It is possible that blurring of vision is due to the dilation of the pupils or less likely to increased tonus of the extra-ocular muscles. If the former, this symptom should of course properly be included in the smooth muscle pattern.

In concluding this discussion of the skeletal muscle pattern of anxiety a fact of some interest should be pointed out, namely, that if one disregards those phenomena which are elicited on examination such as increased knee jerks and considers only what the patient says, the great majority of complaints will be found to lie in the main expressive areas, *i.e.*, the area of the head and to a lesser extent that of the hands.

Those patients in whom the major expression of anxiety takes the form of involvement of smooth muscles may be grouped on the basis of the system which is mainly affected. The cardiovascular complaints (Table IV) require little comment save that those patients who showed precordial pain which radiated down the ulnar aspect of the left arm almost invariably had negative EKGs, and showed no evidence of organic cardiac involvement. Constriction of the veins is unusual though possibly if we had better means of measuring their caliber this could be found more frequently. The gastrointestinal complaints (Table V) also require

little amplification. Patients occasionally present themselves with main emphasis on the respiratory or less frequently on the renal system.

Apart from these, there are certain higher level complaints, some of which can be ascribed tentatively to the categories which have been described, others cannot. These are shown in Table VI. It is possible, provisionally, to place certain of these higher level complaints in one or other of the anxiety patterns already described. Fears of losing one's mind or of sudden death or fears of some fatal disease usually involving the brain were invariably associated with the cardiovascular pattern and appear almost exclusively during the attacks of acute anxiety to which patients showing this pattern are subject. We were unable to demonstrate the existence of these fears in any of our patients who did not show the cardiovascular type of response. It also seems probable that the confusional states are more common in the cardiovascular pattern, but this relationship is not nearly so close as that of the fears. Degrees of anxiety and apprehension are of course common to all patterns. It is of interest to note the great frequency with which this is increased by entering crowded places—churches, movies, large stores and congested places generally. There are in addition certain complaints which cannot be ascribed with certainty to any of the patterns. Some, such as sighing and yawning, cold and wet extremities and sleep disorders, appear to be found in all the patterns; others such as complaints of numbness and tingling sensations while appearing in association with anxiety may actually represent hysterical elements.

Irritability is most commonly found in association with the skeletal muscle type. Table VII shows the frequency of occurrence of the various patterns. Not only are skeletal muscle patterns the most common, but by far the greatest diversity of complaints occur in this pattern. It was found that when the degree of anxiety is increased, it tended to flood over into other patterns, *i.e.*, a patient whose fundamental pattern was the skeletal muscle pattern would when acutely anxious show gastrointestinal and cardiovascular evidences as well, although the skeletal muscle patterns would remain dominant. When the acute attack had subsided the patient would return to his skeletal muscle pattern. The relation between the pattern of tension which the patient had shown before he became sick and that which he now showed was studied. He was asked how he used to respond to suddenly meeting someone whom he did not want to see, to having to get up and make a speech, to sudden dangers as in a threatened automobile accident. His experiences and complaints at those times were compared with

TABLE IV

CARDIOVASCULAR

1. Precordial pressure.
2. Precordial pain.
3. Precordial pain passing down left arm.
4. Precordial pain passing into back.
5. Palpitation.
6. Flushing.
7. Throbbing in neck or head or whole body.
8. Hot sensations.
9. Heaviness of heart.
10. Constriction of veins.
11. Fast pulse.
12. High blood pressure.

TABLE V

GASTRO-INTESTINAL

1. Nausea.
2. Anorexia.
3. Gas.
4. Vomiting.
5. Dry mouth.
6. Diarrhea.
7. Borborygmy.
8. Epigastric sensations.
9. Weight loss.
10. Sinking feelings.
11. "Emptiness."
12. Heart burn.
13. Cramps.
14. Bad taste in mouth.

TABLE VI

HIGHER LEVEL COMPLAINTS

1. Anxiety and apprehension.
2. Irritability.
3. Unreality feelings.
4. Confusion.
5. Fears:
   "Losing one's mind."
   "Dying."
   "Brain disease."

TABLE VII

DISTRIBUTION OF PATTERNS IN 47 CASES

Pattern	No. of cases
Skeletal musculature	19
Cardiovascular	9
Gastro-intestinal	4
Combined	15

those he now showed in comparable reactions. It was possible to get such data in 22 cases. In 20, the pattern remained the same. Those individuals who used to respond to sudden scares by tachycardia and feelings of pressure over the heart were the individuals who came to the psychiatrist with complaints of tachycardia, fears concerning sudden death and on occasion pain over the precordium. Those people who used to react to sudden dangers and threats by trembling of the hands, voice and knees were those who, with anxiety, intensified to a pathological degree complained of almost constant external as well as internal tremor, of aching in the neck, and feelings of great tension and stiffness and of drawing sensations.

Reference should be made to a group of cases in which the patient presented only a fragment of a given pattern as his complaint. In such cases it can be shown that although the patient's attention is focused upon a particular aspect the rest of the pattern is present though perhaps in lesser intensity. An example of this is afforded by a woman who complained of such a degree of tightness of her jaws that she had great difficulty in opening them. It could be demonstrated that she showed a generalized skeletal muscle pattern, but that because of a series of events dating from her girlhood her mouth had acquired a growing significance for her and had been used to an increasing degree to express in non-verbal form her total reaction to situations of stress. Similar examples of the presentation of fragments of the pattern are provided by those patients who find as their reason for coming to a psychiatrist, headaches, tachycardia and gastro-intestinal upsets.

In conclusion, I should like to stress the importance of careful study of the actual complaints of the patients suffering from increased tension or anxiety. It is not necessary to stress the equally desirable search for etiological factors. This is already being carried on almost to the exclusion of any other aspect of the situation. Study of these patterns has served to demonstrate the following points:

1. The pattern dominant during the period of the patient's life when he was showing a normal anxiety reaction tends to remain dominant when his anxiety reaches abnormal levels of intensity. This may prove important in the selection of industrial personnel. Clearly, a person who is going to respond to increased pressure by accentuation of a skeletal muscle pattern will be of limited value in the carrying out of finely coordinated activities.

2. When, during the course of the illness, the anxiety is increased for a few hours or a few days or to points of great intensity, it tends to flood over into other patterns. The patient exhibiting the skeletal muscle pattern may, for instance, begin to develop cardiovascular and gastrointestinal complaints as well. The skeletal muscle complaints remain dominant however and when the intensity of the reaction has subsided the patient returns once again to his more or less exclusive skeletal-muscle pattern.

3. In some individuals, attention becomes focused on certain aspects of the pattern so that he may complain of aching in the back of the neck and stiffness in the face and fail to make any statement concerning his general tension which can, however, be readily brought out on questioning. It is of importance to recognize this since if therapy is directed exclusively towards the patient's complaints and the general increase of tension ignored the results of therapy are likely to be unsatisfactory.

4. A number of symptoms not usually considered as being due to tension have appeared so regularly in the cases studied that one may suspect the relationship to increased tension.

5. Where the complaint is mainly located in one area it is frequently possible to show that that area has acquired special meaning for the patient.

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CLINICAL AND ELECTROENCEPHALOGRAPHIC STUDIES

Correlations of Mental, Electroencephalographic and Anatomic Changes in Cases with Organic Brain Disease [1]

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The question whether certain mental disturbances are associated with equally distributed dysfunction of the entire brain or with dysfunction varying in different regions, is still open to discussion. This problem has been studied by correlating post-mortem and operative findings with the psychiatric symptoms observed clinically. The method employed in this study is that of electroencephalography, which allows us to determine whether there is any correlation between the type, degree and distribution of electroencephalographic abnormality and the associated mental disturbance.

Part I: Correlations between Mental Disturbance and Electroencephalogram

METHOD

One hundred records with delta activity were selected at random from the material of the Mount Sinai Hospital. The records had been taken with a 3-channel Grass electroencephalograph using the following 11 electrodes: 1 vertex electrode (placed on the midline half-way between the nasion and inion), 2 "indifferent" electrodes (placed on the lobes of the right and left ear), 4 pairs of symmetrical electrodes above the hemispheres, namely: 2 frontal electrodes (placed half-way between the nasion and vertex and 3 cms. on either side of the midline), 2 central electrodes (placed 3 cms. lateral from the vertex electrode), 2 parietal electrodes (placed 4 cms. behind the vertex and 7 cms. on either side of the midline), and 2 occipital electrodes (placed 3 cms. in front of the inion and 3 cms. on either side of the midline).

Records from symmetrical electrodes were taken simultaneously and the following leads were employed for these studies: fronto-indifferent, centro-indifferent, parieto-indifferent, occipito-indifferent, fronto-vertex, parieto-vertex, occipito-vertex, fronto-central, centro-parietal, parieto-occipital. The procedure employed for making measurements has been described in a previous paper (1). The percent-time delta ($\%t\delta$) which is the percentage of total length of record occupied by delta activity, was determined for each lead, with at least 100 cms. of record being measured. In this procedure, potentials with a frequency of 6 or less per second and a voltage of at least 20 microvolts were considered as delta waves.

All the leads used were bipolar, including those connecting with the so-called indifferent electrodes which in reality are not indifferent but record potentials from the temporal lobes. In order to obtain an impression of the amount of delta activity attributable to any one electrode, the following procedure was used: the figures for the $\%t\delta$ for all the various leads connecting with one electrode were added and the sum divided by the number of leads. For example: for the left frontal electrode the numbers obtained in left fronto-indifferent, fronto-vertex, and fronto-central leads were added and the sum divided by 3. In this way certain values were obtained for the frontal, central, parietal, occipital and indifferent electrodes on each side. We shall call these values frontal, etc., $\%t\delta$. The total average $\%t\delta$ was obtained by adding all the single values of the 20 leads used and dividing the sum by 20.

The cases were separated into 5 groups according to their psychiatric condition. The characteristics of the various groups are evident from Table I.

RESULTS

Group 1 shows that the presence of delta activity does not necessarily indicate an impairment of mental function. Group 2 shows types of mental disturbance which were fre-

[1] From the Neurological Service of Dr. Israel S. Wechsler, The Mount Sinai Hospital, New York City.

quently found also in patients whose electroencephalograms showed no delta activity. No cases were seen with the symptomatology of groups 3, 4 and 5 in which the electroencephalogram did not show delta activity.

Graph 1 shows average values for the %tδ for each of the 5 groups. Values are shown in the graph for the sides separately. They represent averages not for the right and left sides but for the sides with respectively higher and lower amounts of delta activity. For each side the values of all the cases for the corresponding electrodes were added and the sum divided by the number of cases.

Table I shows that the total average is lower in groups 1 and 2 than in groups 3 and 4 and highest of all in group 5. Graph 1 also demonstrates the relatively lower amounts of delta activity in groups 1 and 2. Group 5 is too small to permit of any definite conclusions; the available evidence in additional cases shows however, that the cases in this group have a large amount of delta activity, distributed over the whole brain.

A more detailed comparison of groups 3 and 4 shows that though the total average values for both groups are not far apart, the two groups differ greatly in the distribution of delta activity. While the values for the central electrodes do not show much difference, group 4 has higher values at the frontal electrodes and lower values at the indifferent and occipital electrodes than group 3. In

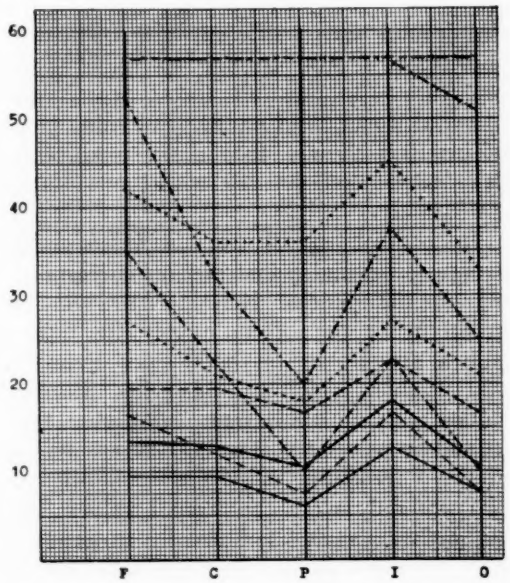
TABLE I

PER CENT TIME DELTA IN 5 GROUPS

("Higher" and "lower" indicate sides with higher and lower amounts of delta activity)

Group No.	Psychiat. charact.	No. of cases	Total aver.	Frontal		Central		Parietal		Indifferent		Occipital		No. of cases with delta activity		
				Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Lower	More on Right	More on Left	Right = Left
1.	Normal	28	10.4	13.5	9.4	12.5	9.4	10.4	6.2	15.6	12.5	10.4	7.3	6	14	8
2.*	Mental changes except clouding of consciousness, coma and facetiousness.	17	15	19.5	16.5	19.5	12	16.5	7.5	22.5	16.5	16.5	10.5	9	7	1
3.	Clouding of consciousness.	38	30	42	27	36	21	36	18	45	27	33	21	16	16	6
4.	Facetiousness without clouding of consciousness.	14	25	52.5	35	32.5	22.5	20	10	37.5	22.5	25	10	7	4	3
5.	Coma	3	57	57	57	57	57	57	57	57	57	57	51.3	0	1	2

* Group 2 includes cases with: (a) defects of memory and retention, (b) mental dullness, inability to concentrate, (c) slight euphoria, overactivity.



GRAPH 1.—Per cent time delta in 5 groups, for side with higher and lower degree of abnormality separately. F—frontal, C—central, P—parietal I—indifferent, O—occipital.

Group 1: ————————
Group 2: — — — — — — —
Group 3: .....
Group 4: —·—·—·—·—
Group 5: ··—··—··—··—

other words, group 4 shows an accentuation of abnormal activity at both frontal electrodes with less abnormality at the other electrodes, particularly the parietal ones; while group 3 shows a greater uniformity of values for the various electrodes with no accentuation at the frontal electrodes.

If this statement is checked for its validity in every single case, it is found that there are 6 cases in the 38 of group 3 in which the frontal $\%t\delta$ is bilaterally higher than the $\%t\delta$ at all the other electrodes. Four of these cases (1 subarachnoid hemorrhage, 1 lymphocytic choriomeningitis, 1 left frontal gumma, 1 left frontal metastatic carcinoma) show a $\%t\delta$ higher than 35 at the parietal and higher than 45 at the indifferent electrodes. This distinguishes these cases from those of group 4 where the $\%t\delta$ was, with one exception, lower at these electrodes. In the fifth case (right fronto-parietal capillary cystic hemangioma) the $\%t\delta$ at the frontal electrode was only 2 per cent higher than at the parietal electrode. In the sixth case (cerebro-vascular lues with paraplegia) there was a difference of only 5 per cent between the frontal and indifferent $\%t\delta$. The seventh case (right frontal spongioblastoma multiforme) shows all the characteristics found as a rule in group 4. Nine other cases of group 3 show a frontal accentuation of delta activity on the side with lower abnormality only.

In controlling all the single cases of group 4, we find a distribution corresponding to the general characteristics of the group in 11 out of 14 cases; the frontal values are higher on both sides than the other values which are also low absolute values with no indifferent $\%t\delta$ higher than 45 and no parietal $\%t\delta$ as high as 35. In one of the 3 remaining cases (presenile dementia) not only were the frontal values high but higher values than usually in group 4 were obtained from the other electrodes on the side with higher abnormality also. Two further cases (left frontal spongioblastoma multiforme, and left temporal hemangioma) did not show any accentuation at the frontal electrodes. So, while the general characteristics of group 4 are present in 11 individual cases of this group, they are absent in 3 cases.

It was stated above that the absolute frontal values are not always higher in group 4 than in group 3. But on the other hand the frontal $\%t\delta$ was at least 15 in all the cases of group 4 while there were 6 cases in group 3 with lower values.

Accentuation of delta activity in the frontal region was also found in 13 out of the 45 cases in groups 1 and 2. However in 11 of these 13 cases the frontal $\%t\delta$ was lower than 15 bilaterally. There remained 2 cases with values corresponding to those of group 4. These were two cases of olfactory groove meningioma.

As far as the separation of group 4 from all the others is concerned, there were 3 out of 83 cases of the groups 1, 2 and 3 which showed the same electroencephalographic characteristics. On the other hand 3 out of 14 cases of group 4 failed to show the general electroencephalographic characteristics of this group.

As for differences between groups 1 and 2 on the one hand and groups 3 and 4 on the other, it was stated that the total average values for groups 1 and 2 are lower than those for groups 3 and 4. This is presented in Table I. This difference is further illustrated by the fact that a total average $\%t\delta$ of more than 20 was present in 8 (18 per cent) of the 45 cases of groups 1 and 2, in 29 (76 per cent) of the 38 cases of group 3 and in 11 (79 per cent) of the 14 cases of group 4.

SUMMARY OF RESULTS

One hundred patients whose electroencephalograms showed delta activity were classified into 5 groups according to their psychiatric status. An attempt was made to correlate the psychiatric status with the electroencaphalogram.

Groups 1 and 2 included 45 patients without psychiatric abnormalities or with such abnormalities as are frequently found in patients without delta activity in the electroencephalogram.

Group 3 included 38 patients with clouding of consciousness, group 4 14 patients with facetiousness without clouding of consciousness. The total average $\%t\delta$ was lower in groups 1 and 2 than in groups 3 and 4 (see Table I). Eighteen per cent of the

cases of groups 1 and 2, 76 per cent of group 3 and 79 per cent of group 4 showed a total average $\%t\delta$ of more than 20.

There was no significant difference between the total average $\%t\delta$ in groups 3 and 4. However, the distribution of delta activity was different in these two groups. Eleven of 14 cases in group 4 showed the frontal values on both sides higher than the other values and bilaterally a frontal $\%t\delta$ of at least 15. In none of these 11 cases was the $\%t\delta$ higher than 45 at the indifferent electrode and higher than 35 at the parietal electrode.

In contrast, group 3 showed only 7 of 38 cases in which the frontal values were bilaterally higher than the other values. In 4 of these 7 cases the values at the indifferent and parietal electrodes were higher than quoted in the preceding paragraph; in 2 others the accentuation at the frontal electrodes was negligible, 2 and 5 per cent respectively.

This shows that in about 79 per cent of the cases facetiousness was associated with an absolutely and relatively high degree of delta activity over both frontal lobes. The same electroencephalographic characteristics were found only in 3 (about 3.5 per cent) out of 83 cases of groups 1, 2 and 3 without facetiousness.

Part II: Correlations between Mental Disturbance and Anatomical Findings

Table II shows the diagnoses in the 100 cases in relation to their psychiatric symptomatology. Under non-focal lesions are included: hypertensive encephalopathy, periarteritis nodosa, subarachnoid hemorrhage, general paresis, meningitis, encephalitis, post-concussion syndrome, tuberous sclerosis, multiple sclerosis, presenile dementia, cerebral hypoxemia. The gliogenous tumors included the following types: astrocytoma, neuroglioma, transitional glioma, neurospongioblastoma, spongioblastoma polare and multiforme.

Correlations between psychiatric symptomatology and more inclusive groups of cerebral lesions are presented in Table III.

TABLE II

Correlations between Diagnosis and Psychiatric Symptoms

(Numbers indicate number of cases)

Diagnosis	Groups 1	2	3	4	5
Non-focal lesions	14	9	16	3*	3
Ependymoma third ventricle	1	..	..	..	..
Pituitary adenoma	3	..	1	..	..
Craniopharyngioma	1	..	1	..	..
Pinealoma	1	..	..	..	..
Cerebellar tumors	1	..	1	..	..
Acoustic neuroma	1	..	..	..	..
Aneurysm basilar artery	..	..	1	..	..
Cystic arachnitis: parietal	1	..	..	..	..
Chronic subdural hematoma: parietal	..	1	..	..	..
Meningioma:					
Frontal parasagittal	1	1	..	2	..
Olfactory groove	1	1	..	1	..
Fronto-parietal	..	1	..	..	..
Temporal	..	1	..	..	..
Parietal	..	1	..	..	..
Hemangioma:					
Cystic, fronto-parietal	..	..	1	..	..
Capillary, temporal	..	..	..	1	..
Hypernephroma: temporal	..	..	1	..	..
Carcinoma:					
Frontal	..	1	1	1	..
Fronto-parietal	1	..	..	..	..
Fronto-temporal	..	..	1	..	..
Gumma: frontal	..	..	1	..	..
Gliogenous tumors:					
Frontal	..	..	2	4	..
Fronto-temporal	..	..	2	1	..
Temporal	..	..	4	..	..
Temporo-parietal	..	..	2	..	..
Parietal	2	..	1	1	..
Parieto-occipital	..	..	1	..	..
Occipital	..	1	..	..	..
Brain abscess: frontal	..	..	1	..	..

* 1 case each of general paresis, presenile dementia, acute encephalitis.

TABLE III

Correlations between Type of Pathology and Psychiatric Symptoms

(Numbers without parentheses indicate number of cases, numbers in parentheses approximate percentage of number of cases)

Diagnosis	Groups 1	2	3	4	5	Total number
Non-focal lesions	14 (31)	9 (20)	16 (35)	3 (7)	3 (7)	45
Midline and posterior fossa tumors.	8 (73)	..	3 (27)	..	..	11
Meningioma, hemangioma, arachnitis, subdural hematoma.	3 (21)	6 (43)	1 (7)	4 (29)	..	14
Gliogenous and metastatic tumors, gumma, abscess.	3 (11)	2 (7)	17 (57)	7 (25)	..	29

This table shows that the non-focal lesions are about equally distributed in groups 1, 2 and 3 with only a few cases in group 4. Only a minority of the cases with midline and posterior fossa tumors showed clouding of consciousness. Most cases did not show delta activity and, therefore are not included in this paper. This means that even a higher percentage of these tumors than indicated in Table III is free from psychiatric symptoms. Non-infiltrating space consuming hemisphere lesions had a larger representation in groups 1 and 2 than in groups 3 and 4 and more such cases appeared in group 4

TABLE IV

CORRELATIONS BETWEEN LOCALIZATION OF LESION AND PSYCHIATRIC SYMPTOMS

(For further explanation see legend to Table III)

Localization	Groups 1	2	3	4	Total number
Midline and posterior fossa.	8	..	3	..	11
	(73)	..	(27)	..	
Frontal	2	3	5	8	18
	(11)	(17)	(27)	(45)	
Fronto-temporal	..	..	3	1	4
	..	..	(75)	(25)	
Fronto-parietal	1	1	1	..	3
	(33)	(33)	(33)	..	
Temporal	..	1	5	1	7
	..	(15)	(70)	(15)	
Temporo-parietal	..	..	2	..	2
	..	..	(100)	..	
Parietal	3	2	1	1	7
	(43)	(29)	(14)	(14)	
Parieto-occipital	..	..	1	..	1
	..	..	(100)	..	
Occipital	..	1	..	..	1
	..	(100)	..	..	

than in group 3. On the other hand gliogenous hemisphere tumors were rare in groups 1 and 2, frequent in groups 3 and 4 and more such cases occurred in group 3 than in group 4.

Table IV illustrates correlations between the localization of focal lesions and psychiatric symptoms. Though the number of cases in each group is small, the table indicates: (1) the frequency of facetiousness (group 4) in cases with pure frontal lobe lesions and their infrequent appearance in lesions involving the frontal lobe in combination with other lobes, (2) the frequency of the psychiatric symptoms of group 3 in lesions involving the temporal lobe only or in combination with other lobes, (3) the rare occurrence of psychiatric symptoms in midline and posterior fossa tumors.

Facetiousness was found in 3 cases of non-focal lesion, and in 11 cases with focal lesions: 8 involving only the frontal lobe, 1 fronto-temporal, 1 temporal and 1 parietal in localization. Of these cases, 1 with Alzheimer's disease, 1 with frontal lobe tumor and 1 with temporal hemangioma did not show a distribution of delta activity as characteristic for group 4. This means that only in 8 of 14 cases, that is 57 per cent, facetiousness was associated with a lesion affecting the frontal lobe alone. Its correlation with this localization is therefore less constant than its correlation with a certain type of electroencephalogram (79 per cent). Fifty-five per cent of the cases with frontal lobe lesion failed to show facetiousness while the same type of electroencephalogram as usually present in cases with facetiousness occurred only in 3.5 per cent of the cases without facetiousness.

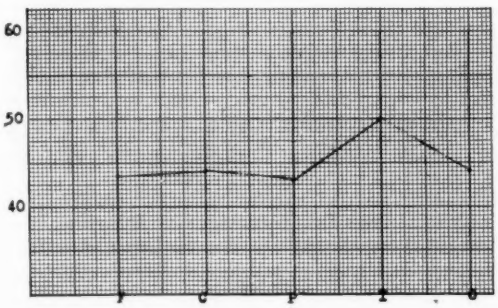
DISCUSSION

The last statement shows that the degree of correlation between psychiatric symptomatology and electroencephalographic findings is greater than the degree of correlation between psychiatric symptomatology and anatomical findings.

Some details of the method used need further discussion. The procedure used in this paper to determine the amount of delta activity at certain electrodes, can be used without further control to find out differences between various cases in the distribution of delta activity. However, the $\%t\delta$ obtained with this method for a certain electrode depends not only on the type of electrical activity at this electrode but on a number of other factors, namely the leads in which this electrode is used, the distance from the other electrodes, and the type of activity picked up by these electrodes. Thus a graph obtained for group 4 must not mean, without further control, that there is really more delta activity present at the frontal electrodes than at other electrodes (though it proves that *in this group* there is more delta activity present at the frontal electrodes than in

other groups). The high values at the frontal electrodes might be caused only by the method used in determining the values for the various electrodes.

Whether this is true or not, can only be determined by applying the method to cases in which there is most probably a diffuse and equally distributed disturbance of cerebral function. Three cases with cerebral hypoxemia caused by cardiac failure were selected as most appropriate for this control. These cases may not be ideal, as hypoxemia does not affect all cerebral functions equally (2); but there is no condition in which a really equal distribution of cerebral dysfunction is known, and so an approximation to this condition has to be accepted. The values



GRAPH 2.—Per cent time delta in cases with cerebral hypoxemia. For further explanation see legend to Graph 1. The amount of delta activity was the same on both sides so that only one line appears in the graph for both sides.

obtained for the $\%t\delta$ in the cases of cerebral hypoxemia are presented in Graph 2. A comparison of this graph with Graph 1 shows that the distribution in Graph 2 is entirely different from the distribution for group 4. It approaches more closely the distribution for groups 1-3. This indicates that the higher values at the frontal electrodes in group 4 mean really that a higher amount of delta activity originates in this group from the frontal region while there is a much more equal distribution of delta activity present in the other groups.

There were 3 cases in which the distribution of delta activity was the same as in group 4 while no corresponding psychiatric symptoms were present. Two of these cases were relatively slow growing meningiomata of the olfactory groove. The absence of facetiousness in these 2 cases might point towards the possibility that the time factor plays an important rôle in the creation of facetiousness in the sense that slow developing anatomical change and cerebral dysrhythmia may not cause facetiousness while rapid changes may. This possibility is also suggested by our knowledge about the restitution of function in cases of chronic cerebral pathology. On the other hand certain differences in the mental pictures in the presence of similar electroencephalograms may also be explained by individual differences in cerebral function and personality (Kanzer(3)). All this, however, is hypothetical, the more so as there was one case of olfactory groove meningioma with facetiousness and one gliogenous tumor without facetiousness but with a distribution of delta activity as characteristic for group 4.

There are not many papers offering observations comparable to what has been presented here. Only one paper by Lindsley and Cutts(4) reports on measurement of the amount of delta activity in various regions; but they describe studies on children with behavior problems, a type of case not included in this study. Hoch and Kubis(5) without reporting the results of measurements found that 4 of their patients with general paresis showed an accentuation of slow activity in the frontal leads but they do not say whether these cases showed a psychiatric symptomatology different from that of other cases with general paresis, a problem which I feel would be worth attacking with the method used here.

The presence of delta activity in cases with clouding of consciousness and with unconsciousness is a fact known from a great number of publications, but for this group of patients, too, no exact measurements have been made. Our few cases with coma showed a higher amount of delta activity and waves of lower frequency and higher amplitude than cases with a pure clouding of consciousness. It should be mentioned, however, that there are states of coma in which there is no delta activity but only low voltage random activity. This occurs as a transitory phenomenon during postconvulsive stupor (6). If found in cases with organic cerebral pathology, the prognosis is as a rule

extremely bad. Evidently a state of coma may be associated with very severe cerebral dysfunction as well as with an almost complete afunction of the brain.

There are indications in the literature confirming the observation that patients with mental symptoms, as in group 2 may show no delta activity or less delta activity than patients as in group 3. Hoch and Kubis(5) mention that cases with cerebral arteriosclerosis and Korsakoff's disease showed normal EEG's in the presence of memory defects. Finley, Rose and Solomon(7) state that patients with mood disturbances, paranoid ideas and euphoria showed less slow activity than others with "more profound" mental disturbances.

This paper deals only with patients with organic cerebral pathology. For this reason the literature on the EEG in the major psychoses, in epilepsy and related disorders will not be discussed here. It seems worthwhile, however, to conduct similar studies as to the amount and distribution of delta activity in cases with epileptic and related disorders where delta activity appears frequently in bursts only. Knowing that short bursts of delta activity may be associated with a slowing of mental processes only so slight that experimental methods are necessary to discover it (Schwab(8)), it would be valuable to know at which amount and which distribution of delta activity mental dullness (Putnam and Merritt(9)) or a definite clouding of consciousness is usually present.

By bursts of delta activity we mean the appearance of delta waves in groups composed of waves of approximately the same voltage and frequency. In contrast to such bursts, "irregular" delta activity is composed of delta waves of various frequencies and voltages in an irregular pattern. Only "irregular" delta activity was considered in determining the results described in this paper. However, attention was paid also to the appearance of bursts of delta activity. No correlation of this type of delta activity was found with the various groups except that bursts of a frequency of 2.5 or less per second were absent in groups 1 and 2.

The physiological mechanisms of irregular delta activity and bursts of delta activity are certainly entirely different. Symmetrical bursts of delta activity, even when not appearing all over the brain but localized only over the frontal, occipital, etc., region are in my opinion due to a primary subcortical dysfunction. In one case, not included in the 100 cases constituting the original material for this paper, bursts of delta activity appeared exclusively from both frontal lobes with a frontal %tδ of 32. This patient, suffering from meningo-encephalitis, was not facetious but showed poor orientation and memory.

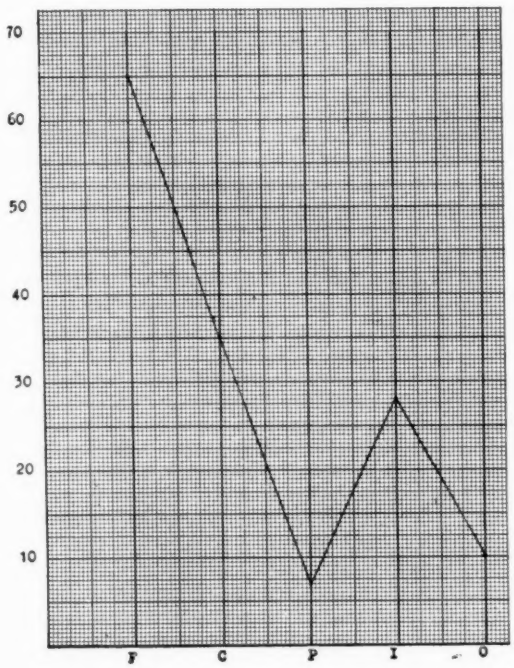
Delta activity indicates most probably a dysfunction of cerebral nerve cells. It was present in all cases of groups 3 and 4. Also additional cases with clouding of consciousness and facetiousness not included in this paper, all showed delta activity. Delta activity can be absent in cases with symptoms as in group 2. This suggests that the symptoms of groups 3 and 4 are due to a dysfunction of remaining cells while symptoms as in group 2 can be produced by a loss of functioning tissue without dysfunction of the remaining nerve cells. This makes it probable that facetiousness is not due to a loss of frontal lobe substance but a dysfunction of the frontal lobes, possibly associated with a dysfunction of deeper centers controlled by pathways from the frontal lobes, as also pointed out by Hebb and Penfield (10).

Only cases with a relatively high amount of delta activity over *both* frontal lobes showed facetiousness which supports Brickner's(11) conception of the bilateral representation of frontal lobe function. This conception is further sustained by the observation of an additional case, not included in the original 100 cases. This patient had a transitional glioma of the left frontal lobe. The distribution of delta activity is presented in Graph 3. There was no delta activity on the right side but a high amount of delta activity over the left frontal region. This patient was not facetious but was sluggish in all his mental reactions.

It was stated above that facetiousness occurred only in such cases in which there was a higher amount of frontal lobe delta activity than over other parts of the cortex. If a high amount of delta activity was found over other regions also, there was no fa-

cetiousness but clouding of consciousness. This electroencephalographic result agrees with the fact that facetiousness was more frequent in pure frontal lobe lesions than in fronto-temporal and fronto-parietal lesions (see Table IV).

The distant effects of many tumors must be considered as the cause for the often unsatisfactory attempt to correlate site of tumor and psychiatric symptoms (Keschner, Strauss and Bender(12)). This paper helps to show that this is at least partially due to



GRAPH 3.—Per cent time delta in a case with delta activity on the left side only. For further details see text page 48 and legend to Graph 1.

the anatomic approach to this problem by which it is very difficult to evaluate distant effects of the primary lesion. The more functional electroencephalographic approach seems to be more satisfactory and represents another method for the study of the problem of psycho-physical correlations.

SUMMARY AND CONCLUSIONS

1. One hundred cases with organic brain disease and delta activity in the electroencephalogram were studied for correlations of the psychiatric status with the electroencephalogram and anatomical localization.

2. This investigation showed that disturbances such as memory defect, mental retardation, dullness, inability to concentrate, overactivity and slight euphoria can occur without any delta activity in the electroencephalogram. They may be present also with a small amount of delta activity. Higher amounts of delta activity are associated with the syndromes of clouded consciousness and facetiousness. The delta activity was more equally distributed over the brain in cases with sleepiness and clouding of consciousness than in cases with facetiousness. The latter showed a relatively high amount of delta activity over both frontal lobes and a smaller amount over other regions (for exact numbers see summary on page 44).

3. Facetiousness is associated with dysfunction, not afunction, of both frontal lobes with a smaller degree of dysfunction of other parts of the hemispheres. The electroencephalographic results in this respect are in good agreement with the fact that facetiousness was most frequently found in lesions restricted to the frontal lobes and not invading other parts of the hemispheres. For further correlations between anatomical findings and psychiatric symptoms see page 45.

4. The degree of correlation between the electroencephalogram and the psychiatric symptoms was higher than the degree of correlation between the anatomy of the lesion and the psychiatric symptoms. Electroencephalography promises to be of further assistance in the correlation between disturbances of cerebral mechanisms and behavior, particularly in the differentiation between such psychic disturbances as are associated with a pure loss of cerebral tissue and such psychic disturbances as are associated with dysfunction of the remaining cerebral tissue.

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ELECTROENCEPHALOGRAPHY IN BEHAVIOUR PROBLEM CHILDREN[1]

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A. INTRODUCTION

The status of electroencephalography in psychiatric disorders has been discussed in many papers. Jasper(1), in reviewing the results of the work of these authors, states that "electroencephalograms from patients with mental disease show a wide variety of abnormalities as well as many within normal limits. Except for the discovery of unsuspected localized lesions results are, for the most part, too complicated for present interpretation and show little if any relationship to any of the diagnostic categories." Finley(2) and his co-workers have studied the electroencephalograms of large numbers of patients with diagnoses of schizophrenia, manic-depressive psychosis, mental deficiency, psychopathic personality, psychoneuroses and primary behaviour disorders of adults. They found that "in each clinical group there is considerable variation in the character of the patterns and that there is much overlapping of the various types of patterns throughout the clinical groups."

In spite of this confused picture in relation to other psychiatric disorders reports have been accumulating which indicate that the EEGs of so-called behaviour problem children have a significant tendency to exhibit abnormal patterns. Jasper(3) and his co-workers noted that 71 per cent of the problem children they studied had abnormal EEGs. Straus, Rahm and Barrera(4) found that 13 of 22 children with 'primary behaviour disorders' showed abnormal EEGs. Brown and Solomon(5), in a previous paper, reported that 17 of 20 delinquent boys committed to a correctional school showed abnormal EEGs, most of which were of the 'psychomotor-like' type.

None of the above studies involved either a control or comparative group. Lindsley and Cutts(6) examined 50 'behaviour problem children' and 36 normal children of both sexes and varying from 7 to 13 years of age.[2] They concluded that there was a significant difference in the electroencephalograms of the two groups. "While 52 per cent of the behaviour problem group showed abnormal waves only 25 per cent of the normal children gave a similar result." Secunda and Finley(7) recently published their findings on a study of 143 'behaviour problem children' and 76 'normal' children of both sexes and of the same age range. The group with 'behaviour disorders sent by courts, by physicians at the request of parents and by foster parents, showed 26 per cent normal EEGs, 23 per cent borderline and 51 per cent of abnormal tracings. Of the normal group 68 per cent showed normal EEGs, 17 per cent borderline, and 15 per cent abnormal tracings.[3] In the latter two papers the authors have studied 'behaviour problem' children and 'normal' children of the same age range. These are comparative rather than controlled studies since the only factor which approximates control is that of chronological age. We propose in our study to use groups more nearly comparable in as many factors as possible. In this manner the trend

[1] From the Department of Psychiatry and the Laboratory of Electroencephalography, Yale University School of Medicine and the Connecticut School for Boys.

[2] The authors state that in most cases in the behaviour problem group there were unfavorable environmental factors either in the home or in the community. In the normal group the subjects were all from good homes and environment, to the authors' knowledge.

[3] In the behaviour problem group only 18 per cent of the families were considered 'normal' whereas the 'normal' group of children were from good homes and environment, to the knowledge of the authors. Since relationship between behaviour and the electroencephalograms is under scrutiny in these studies, it would seem that behaviour problem children and normal children with similar cultural, school, home and neighborhood circumstances would afford a more acceptable basis for comparison.

shown in the EEGs in 'behaviour problem children' may be further tested and its significance further evaluated.

B. Statement of Problem

We have set the following objectives in the present study:

(1) In a given social situation to determine and select two extreme groups from the point of view of behaviour and adjustment, namely the best and most poorly behaved, and to study and compare their electroencephalographic tracings.

(2) To determine some of the characteristics of the two groups and the extent to which these characteristics are related to electroencephalographic findings. Intelligence level, efficiency in school performance, psychiatric classification are among the factors to be considered.

C. Material

1. Choice of Groups

Four groups of boys with a chronological age range of 12 years and 11 months to 16 years and 5 months were chosen from a typical junior high school and from a training school for male juvenile delinquents. They represent the best and most poorly behaved boys in the eighth grade of the junior high school and the best and most poorly behaved boys of a similar age range in the training school.

The groups were chosen in the following manner. All boys in the lower half of a typical junior high school were rated by three teachers on Schedule B of the Haggerty-Olson-Wickman Behaviour Rating Schedule(8). This consists of 35 items classified into intellectual, physical, social and emotional characteristics. By means of statistical weights these ratings of behaviour may be used to indicate problem tendency. The validity of the measure for this purpose has been demonstrated by Olson(9). One hundred thirty-one boys from the junior high school were rated in this manner. The 20 most poorly behaved and the 20 best behaved were chosen for the purpose of this study. The validity of this procedure was confirmed by the actual records of the boys in the school.

Twenty boys were chosen from the training school population on a clinical basis, They represent the boys in the same general age range, who in the consensus of opinion of the psychiatrist, the vocational director and the school principal were the best and most poorly behaved boys in the institution. Ratings of behaviour on the Haggerty-Olson-Wickman scale were obtained from this group also. Two teachers and a cottage father comprised the rating group. There was a remarkable agreement between scale ratings and clinical opinions of the psychiatrist, vocational director and school principal.

2. Characteristics of the Group

A. Chronological Age Range (See Table I).—Only one boy in this series was less than 13 years of age. Lindsley(10), Smith(11), Brill and Seidemann(12), and others have shown that the adult brain wave patterns are already established at this age level, so that the normal year to year variations in children below this age level need not be taken into consideration in our study thus eliminating a complex variable.

TABLE I

	Best behaved jr. high school boys (J W)	Most poorly behaved jr. high school boys (J P)	Best behaved training school boys (TI W)	Most poorly behaved training school boys (TI P)
Number of boys.....	20	20	10	10
Age range	13.2 to 16.5	13.5 to 16.2	12.11 to 16.2	13.11 to 16.5
Mean age	14-9	15-5	15-2	15-3

B. Intelligence Quotient.—

TABLE II

	Best behaved jr. high school boys (I W)	Most poorly behaved jr. high school boys (I P)	Best behaved training school boys (II W)	Most poorly behaved training school boys (II P)
Range of intelligence quotient (Binet-Simon)	71-120	80-110	70-110	70-105
Total number of boys	20	20	10	10
Mean I.Q.	99	94	95	92
Standard deviation	11	21	11	8

Range in intelligence quotients for the entire group is from 71 to 120. It has been demonstrated that low intelligence in itself does not affect the electroencephalographic pattern.

C. Efficiency of Performance.—Efficiency was determined by taking a measure of potentiality, such as is afforded by a measure of intelligence and determining its relation to performance in a work situation. In this instance, since all were attending school a measure of school achievement was used. The achievement quotient (A.Q.) represents the ratio of educational age over mental age, E.A./M.A. = achievement quotient (A.Q.). Educational age is determined by the score on a standardized educational achievement test. Mental age is the level reached on a standardized intelligence test. The achievement quotient (A.Q.) is a measure of learning efficiency computed by dividing the educational age by the mental age. The tests used were the Revised Stanford Achievement for measurement of educational achievement and the Revised Stanford Binet, form L, for measurement of intelligence. (See Table III.)

Significant differences are revealed in the level of efficiency with which the varying groups performed. The groups which are better adjusted to the standards of the school in the one case and the institution in the other perform at more efficient levels than the poorly adjusted groups in these situations.

D. Personality Classification.—The psychiatrists were familiar with the entire history of each boy in the institutional group and had conducted extensive studies on this group. In the case of the public school group the psychiatrists based their opinions on personal interviews and on facts obtained from school histories and from the school psychologist. The examiners were not familiar with electroencephalographic findings or with the Haggerty-Olson-Wickman scores at the time of the classification.

A rough classification into (A) normal personalities, (B) personalities with mild psychopathic manifestations and (C) personalities with severe psychopathic manifestations was made. Patients with disturbances of psychological functions due to known or probable brain injury or disease were excluded. Of the 60 boys in the study the distribution was as shown in Table IV.

TABLE III

	Best behaved jr. high school boys (I W)	Most poorly behaved jr. high school boys (I P)	Best behaved training school boys (II W)	Most poorly behaved training school boys (II P)
Number of boys	20	20	10	10
Mean (A.Q.)	89	81	91	83
Standard deviation	4	8	7	8

TABLE IV

PERSONALITY CLASSIFICATION

	Best behaved jr. high school boys (I W)	Most poorly behaved jr. high school boys (I P)	Best behaved training school boys (II W)	Most poorly behaved training school boys (II P)
A. Normal	15	4	4	..
B. Mild psychopathic traits	5	7	6	..
C. Severe psychopathic traits	..	9	..	10
	20	20	10	10

Examination of Table IV indicates that the groups differ significantly in distribution of types of personality structure. The well-adjusted school group consists predominantly of essentially normal personalities. Of the five boys in the group with mild personality difficulties all manifested guilt feelings in relation to masturbation, one manifested excessive prudishness concerning sex, one was a nail biter and showed excessive feelings of insecurity in a difficult home situation, and two were excessively shy. In no case was any symptom or group of symptoms sufficiently severe to seriously affect the attitudes, efficiency, achievement or normal social relations of the person concerned.

The normal personalities in the most poorly behaved junior high school group are in boys whose difficulties were confined predominantly to the school situation. Economic pressure at home, absence of incentive and encouragement from parents, poor cultural conditions for scholarship and an urge to earn money, have led to dissatisfaction with school resulting in poor attention, occupation in street trades and poor performance in school, as well as occasional mischief and truancy. Frustration, failure and aggression appear to be related to one another in these instances.

The normal personalities in the well adjusted institution group are in boys with poor economic background, large families, broken homes, repeated change of home, undesirable street trades and influences, and mild, sporadic delinquency histories. Among the well adjusted boys in the institution whose histories revealed mildly psychopathic traits was one bright, apprehensive boy who was anxious and tense and a stutterer. He lived in a rural district where there were no recreational facilities. He had only one playmate. His reputation in the home, the public school, the neighborhood was excellent, but on one occasion he trespassed with his friend on the property of an art gallery and destroyed several paintings of considerable value. He was committed for this one act of delinquency. He adjusted very well at the school except for the evidence of mild tension and worry, which was allayed by reassurance and promise of early return to the community. He rightfully belongs in the category of the 'accidental' delinquent.

Nine of the 20 boys in the most poorly behaved junior high school group were regarded as psychopathic. Several of these boys were delinquents on probation. All of the 10 most poorly behaved boys in the institution were regarded as severely psychopathic. The latter fact is not surprising for they represent the 10 most difficult, persistent cases of behaviour disorder and delinquency in the committed population of a correctional institution. Those in the so-called psychopathic group appear to manifest a constant inability to profit from experience. They seem to have no organized, constructive goals or ambitions. They are emotionally unstable and cannot be depended upon. They often act impulsively and show a lack of consideration for their associates. They "do first and think after," as several expressed it. They are in continual difficulty and are the repeaters among the delinquents. The disorders and disharmonies in personality factors among the worst behaved group in the institution were as a rule more marked than in the most poorly behaved junior high school group.

Apparatus and Procedure

The records were obtained with a Rahm six channel electroencephalograph. Electrodes were placed over the frontal, central, parietal, occipital and temporal region with an "indifferent" electrode on each ear lobe.

Bipolar recordings were obtained by six simultaneous records from the frontal to central, central to parietal and parietal to occipital or central to temporal regions. Six simultaneous recordings were obtained from the frontal, central and parietal, or frontal, central and temporal regions on each side, grounded to the "indifferent" ear lead. Hyperventilation for a period of 1½ minutes at a rate of about 15 deep respirations per minute was done in each case.

The records were classified as normal, borderline abnormal or abnormal. Samples of the normal records of A. P. and J. M. are shown in Fig. 1. All records which had petit mal type of waves and psychomotor waves, as described by Gibbs and Gibbs(13), as

well as the dysrhythmias described by Jasper (14), characterized by diffuse spikes, sharp waves and paroxysmal hypersynchrony, were considered abnormal (Fig. 2). Those records which had a marked variability of the wave frequencies and amplitude with short periods of slow activity varying with periods of fast activity were classified as abnormal (Fig. 2). A few of the records had foci of abnormality of varying degrees of intensity (Fig. 3). Records read as the borderline abnormal type were those which had infrequent periods of sharp waves of the six per second type or that had more than the normal response to hyperventilation (Fig. 3). Changes produced by hyperventilation were considered abnormal if there were spike and wave forms or the immediate and prolonged production of delta waves.

The records were read without a knowledge on the part of the readers as to the character of the subject.

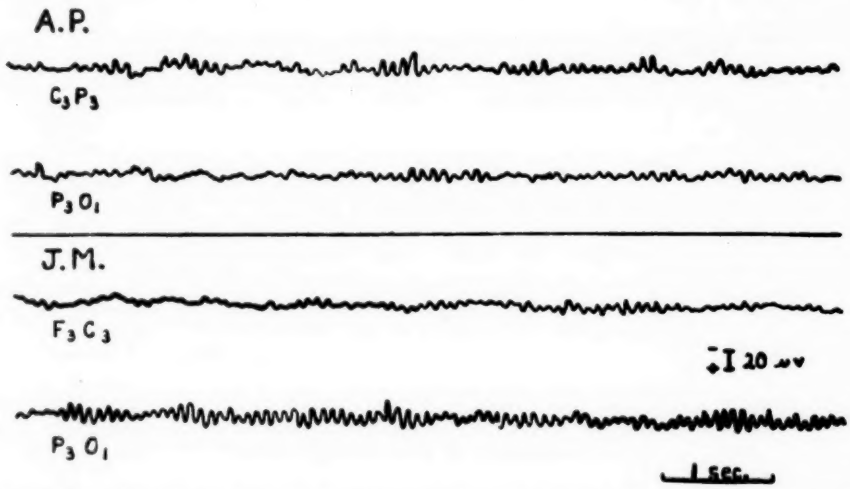

FIG. 1.—Both of these records are classified as normal. A. P. is a record of one of the best behaved boys in the junior high school group. J. M. is an EEG of a well adjusted boy in the training school for delinquents.

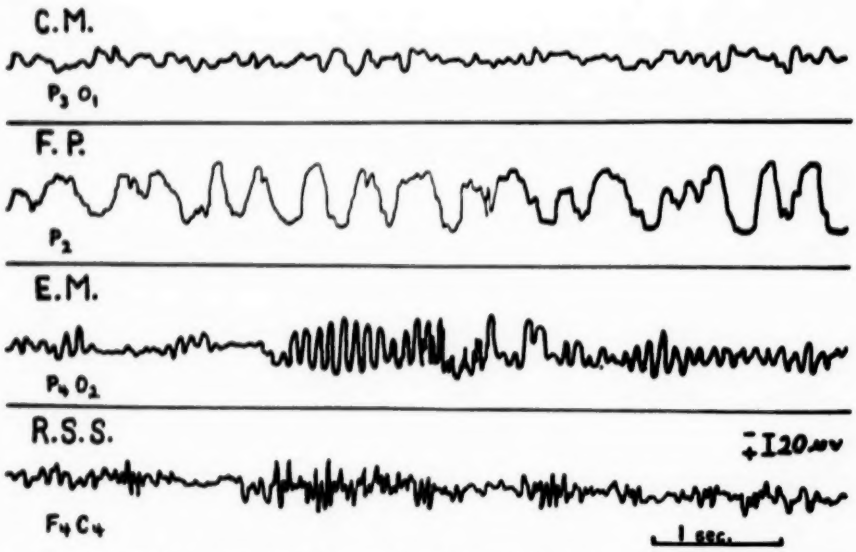

FIG. 2.—These samples demonstrate the various types of abnormal records. C. M. is a sample from one of the best behaved junior high school boys. F. P. is a sample from another junior high school boy in the best behaved group. E. M. and R. S. S. are samples of records from two most poorly behaved training school boys.

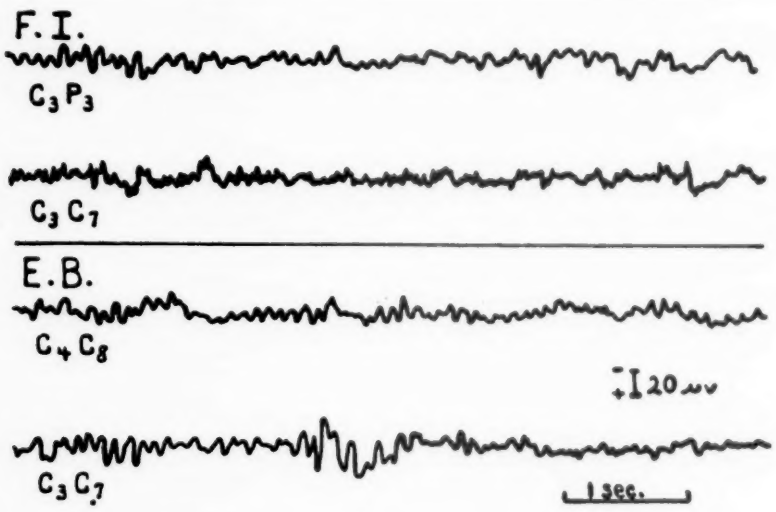

FIG. 3.—Focal abnormality in the left central and temporal region (C_3C_7) of E. B. C_4C_8 is a record taken at the same time from the right central and temporal region. F. I. is a sample from one of the normal control group whose EEG was classified as borderline abnormal.

RESULTS

I. On Basis of Quality of Adjustment.—tendency of 'behaviour problem children' to exhibit abnormal EEGs. Abnormal EEGs in 60 per cent of the most poorly behaved

TABLE V

Electro-encephalograms	Junior high school group: Best behaved (I W) No.	%	Junior high school group: Most poorly behaved (I P) No.	%	Correctional institution group: Best behaved (II W) No.	%	Correctional institution group: Most poorly behaved (II P) No.	%
Normal	6	30	6	30	5	50	1	10
Borderline	3	15	2	10	1	10	..	.
Abnormal	11	55	12	60	4	40	9	90

Combining all boys from

	(1) Junior high school No.	%	(2) Institution No.	%
Normal	12	30	6	30
Borderline	5	12½	1	5
Abnormal	23	57½	13	65

The presence of 90 per cent of abnormal EEGs in the most poorly behaved group in the institution and a total of 65 per cent of abnormal EEGs in all 20 delinquents studied is comparable with the results obtained in our previous study of the EEGs in committed delinquents randomly picked. It also agrees with the results obtained by other authors in 'behaviour problem children.' This would tend to confirm the trend or junior high school group also point in this direction but the presence of 55 per cent of abnormal EEGs in the 20 best behaved boys in the junior high school is inconsistent with the above findings, and is difficult to explain. Gibbs' finding of many abnormal EEGs in college students of superior standing is in agreement with our results and emphasizes the difficulty of interpretation of this phenomenon in relation to behaviour.

II. On Basis of Intelligence.—

TABLE VI

Intelligence quotients	Electroencephalograms		
	Normal	Borderline	Abnormal
70– 84	4	1	8
85–109	9	4	19
110–121	5	1	9

The distribution of normal, borderline and abnormal EEGs does not appear to be related to intelligence. This agrees with results obtained by other observers who have found that intelligence level in itself does not influence the EEG. It will be noted that 9 of the 10 boys in the poorly adjusted institution group had abnormal EEGs. The range of I.Q.s in this group was from 70 to 105 with a mean I.Q. of 92.

III. On Basis of Comparison of Haggerty-Olson-Wickman (H-O-W) Scores and EEG Tracings.

As stated above the H-O-W scores are measures of behaviour problem tendency. The lower the score the less is the behaviour problem tendency, the higher the score the greater the behaviour problem tendency. Of the 60 boys studied, the 30 boys with the lower scores and the 30 with the higher scores were put in separate groups and the EEG findings tabulated and compared. Table VII summarizes the results.

TABLE VII

COMPARISON OF ELECTROENCEPHALOGRAM WITH H-O-W SCORES

H-O-W scores	Electroencephalograms					
	Normal		Borderline		Abnormal	
	No.	%	No.	%	No.	%
150–250	11	37	4	13	15	50
275–450	7	23	2	7	21	70

Though the two groups are extremely opposite with regard to degree of behaviour problem tendency and manifestation as expressed by the H-O-W ratings, there is no statistically significant difference in the EEG results.

IV. On Basis of Efficiency of Achievement.

Comparison of efficiency of achievement (A.Q.) ratings and the EEG shows similar discrepancies and lack of correlation. Comparison was made case for case between A.Q. and EEG, but tabulation of these results would be too space-consuming. Of three boys in the best behaved junior high school group with A.Q.s of 100, one had a normal and two abnormal EEGs. In the most poorly behaved junior high school group one boy with an A.Q. of only 70 and another with an A.Q. of 75 showed normal EEGs. In the most poorly behaved institution group the one boy with a normal EEG had an A.Q. of 80. The other 9 in this group whose EEGs were abnormal had an A.Q. range of 65 to 95.

V. On Basis of Personality Classification.

In the table on personality classification and the EEG, we find that among 15 boys classified as of normal personality only 5 had normal EEGs. Other discrepancies may be found on further inspection of the tables below.

TABLE VIII

PERSONALITY CLASSIFICATION AND ELECTROENCEPHALOGRAPHIC TRACINGS

A = Normal personality
B = Boys with mild psychopathic traits
C = Psychopathic personalities

Personality	Electroencephalograms			Total
	Normal	Borderline	Abnormal	
GROUP I W—BEST BEHAVED JUNIOR HIGH SCHOOL GROUP				
A	5	2	8	15
B	1	1	3	5
C	..	..	..	0
GROUP I P—MOST POORLY BEHAVED JUNIOR HIGH SCHOOL GROUP				
A	2	..	2	4
B	1	1	5	7
C	3	1	5	9
GROUP II W—BEST BEHAVED GROUP IN INSTITUTION				
A	3	..	2	5
B	2	1	2	5
C	..	..	..	..
GROUP II P—MOST POORLY BEHAVED GROUP IN INSTITUTION				
A	..	..	..	..
B	..	..	..	..
C	1	..	9	10

Only in the most poorly behaved institution group, where there is so high a percentage of abnormal EEGs is there coincidental correlation among the various factors considered (quality of adjustment, Haggerty-Olson-Wickman score, efficiency and personality) and the EEG. This group represents the most difficult and serious type of behaviour problem, and it rated lowest among the groups studied in all factors. Is it possible that this very high incidence (9 of 10 cases) of abnormal EEGs is specifically related to the severity of the problems manifested by these boys? A comparison of these factors separately with the EEG showed no correlation with any of them. Does the composite of adverse factors present in the boys in this group represent a physiologic change reflected in a change in the cortical electrical activity? This is very difficult to answer. It is to be remembered that one of these 10 boys had a normal EEG and since completion of this study we have encountered several other delinquents with equally unfavorable traits and serious behaviour difficulties who have had normal EEGs. Furthermore the presence of 55 per cent of abnormal EEGs of the same type in the best behaved group of boys, without any behaviour difficulties whatsoever further complicates the picture and makes interpretation difficult.

A summary of several cases with their electroencephalographic findings will illustrate more specifically the type of correlation and discrepancy we have encountered again and again.

CASE 1.—C. M., age 13-5, height 61 inches, weight 106 pounds, average muscular and genital development, neurological examination negative. Family history negative for nervous and mental disease. I.Q. 110, A.Q. 100, Haggerty-Olson-Wickman scale 150, normal personality, *abnormal EEG.*

This boy's school record is very good. He appears to be, and by reputation is, a reliable, considerate, warm and friendly person with realistic goals and ambitions and normal drive. He is a pretty adequate person, successful in his social and academic life and reasonably mature in his outlook and attitudes.

The electroencephalographic report was as follows: "Average normal alpha activity is recorded from the occipital areas. There is an abundance of square-typed delta activity appearing especially in the fronto-centro-temporal areas on both sides. There is some slight increase in abnormal waves during and following hyperventilation. The rate of delta activity is predominantly 3 to 5 per second. Impression: *Diffusely abnormal EEG.*"

CASE 2.—A. P., age 13-7, tall, acne-faced, red haired, vivacious, animated, talkative, gossipy, somewhat restless and fidgety, the president of the junior high school class. I.Q. 114, A.Q. 95, Haggerty-Olson-Wickman score 160.

This boy has an excellent record in school and a fine reputation in the neighborhood. The father is a boiler maker; the family income is adequate. There is one younger brother in the family. The mother is overprotective. The boy is resentful against his parents because of their foreign ways. He is ashamed because his mother gives him Italian sandwiches for his school lunch. He is the 'teacher's pet' and is somewhat effeminate in his mannerisms. There are some guilt feelings about masturbation. He bites his finger nails.

Electroencephalogram showed a 9½ to 10½ per second average amplitude alpha activity. These waves are clearly expressed in all cortical areas. Delta activity almost completely absent.

One of the best adjusted boys in the junior high school group showing minor personality difficulties, cultural conflict in family, submissive and dependent, somewhat effeminate. *Normal EEG.*

CASE 3.—D. E. L., age 15-2, in junior high school group. Short, restless, rocks in his chair, taps with feet constantly. Haggerty-Olson-Wickman score 400, I.Q. 94, A.Q. 80, worst behaviour record in class.

This boy repeated the fifth grade because teacher made him 'mad' and he hit her. He has truanted occasionally, talks back to his teacher, is always smoking, was chased by policemen for gambling in the street, and has a record of stealing from parked cars and stores. He is a nail biter. His father obtained a job for him in a barber shop to keep him off the street, but the boy often stayed away from work and used his earnings for gambling and bowling. Other boys in the school think there is something wrong with him—"the way he acts and laughs." He is unpopular. He thinks everyone is picking on him. He fights with other boys frequently.

Electroencephalogram: "There is an 11 to 12 per second average amplitude alpha activity which occasionally speeds up to 13 or 14 per second (this suggests the fear or excitement type of acceleration). Hyperventilation produces no appreciable change. Delta activity was nowhere in evidence. Impression: *Normal EEG.*

An aggressive boy—a serious behaviour problem of long duration at home, in the neighborhood and in the school. *Normal EEG.*

CASE 4.—J. M., age 14-2, a tall, thin, negro boy, well adjusted in the correctional institution. I.Q. 75, Haggerty-Olson-Wickman score 200, A.Q. 95.

This boy was described as follows: "Not too bright but works well, mixes well with other boys, a good boy to have around, never has to be disciplined, quiet, courteous, affable, works to capacity but lacks initiative."

His father is dead; his mother works and he was unsupervised. He was well liked by teachers in the public school and his behaviour was good and work up to capacity. He is suggestible and was influenced by a gang of seven other colored boys who were involved in a series of petty thefts and mischief in the neighborhood which afforded no organized recreational activities. He was ashamed to tell his teachers that he was on probation for delinquency. He was committed as much because of lack of supervision at home as for his minor delinquencies.

Electroencephalogram: "11½ to 12 per second activity of average amplitude persists throughout the record, appearing as a typical alpha rhythm. Hyperventilation produces a very small amount of 4 to 5 per second low amplitude activity. The record returns to normal almost immediately after hyperventilation stops. Impression: *Normal EEG.*

Case 5.—R. S. S., age 14. Short, chubby, babyish in appearance, immature in physical and sexual development. I.Q. 93, A.Q. 80, Haggerty-Olson-Wickman 310, poorly adjusted in correctional institution. This boy has been a behaviour problem for many years. His mother and father were divorced in 1932. The father was given custody of the children because of "infidelity and moral turpitude" of the mother. There were two male siblings of 13 and 17 years of age. A housekeeper, who later married the father, cared for the children. The siblings did very well under this arrangement but the patient was in constant trouble at home, in school and in the neighborhood. In 1937 a psychiatrist said of him that "he desires attention but finds it difficult to conform socially. He feels inferior and abused. His behaviour is irritating and disturbing." He liked to play with fire. He was destructive in school and always fighting. He was expelled for a while in 1937. He stole from home and broke into stores. On one occasion he severely beat his stepmother. He is oversensitive, insecure, suspicious and self-centered and immature in his attitudes and ambitions. He was finally committed to the correctional school where he was a source of trouble. He was sent home after a period at the school but had to be returned because of his erratic and chaotic behaviour.

Electroencephalogram: "11½ per second low amplitude rhythm characterizes the record. Occasional bursts of low amplitude 21 per second sharp activity occur at intervals in the right fronto-central area and at higher gains are expressed in the left frontal area. Occasional sharp waves appear in both frontal areas being more pronounced in the right. Relatively frequent random spike formations more prominent on the right are present. Occasional 6 per second flat top waves appear bilaterally. The right sided abnormal activity is prominent in the right temporal area. Hyperventilation produces bursts of flat topped 6 per second activity within 35 seconds. Further hyperventilation at one minute produces random delta activity. Impression: A generally abnormal EEG suggesting probably unilateral (right fronto-temporal) pathology."

A poorly adjusted boy, unstable, psychopathic personality, a sibling doing well under similar circumstances, mother psychopathic, boy sensitive, suspicious, impulsive, immature, irritable, no response to treatment, a chronic delinquent. *Abnormal EEG.*

Discussion

The case histories illustrate discrepancies and lack of correlation found too frequently in individual cases. The most consistent incidence of abnormal EEG was found in the poorly adjusted institution group. In this group there is a very heavy concentration of adverse personal and environmental factors. The consistently high incidence of abnormal EEGs in this group would suggest that this characteristic is probably one more additional unfavorable personal factor influencing behaviour adversely. However, the very frequent presence of abnormal EEGs of the same kind found by us and by other observers in children without behaviour problem manifestations and of normal tracings in apparently similar types of behaviour problems makes it difficult to interpret the significance of the findings other than to note the trend or tendency toward higher incidence of abnormal tracings in the behaviour problem group.

The reports of other authors when examined carefully appear to be no more conclusive than our studies. Lindsley and Cutts (6) compared a group of so-called 'behaviour problem children' with a group of normal children of both sexes and of the same age group. The problems "were of a wide variety and consisted of such factors as hyperactivity, irritability, restlessness, temper tantrums, lying, stealing, truancy, obscenity, running away from home and defiance of authority to the extent of unmanageability in the home or delinquency in the community. It must be emphasized that the majority of the children were from the low or middle economic classes. In most cases there were unfavorable environmental factors either in the home or the community, but in many instances there were siblings making a satisfactory adjustment under the same circumstances. To the knowledge of the authors the normal children were all of good homes and environment and were not recognized as presenting any problems in behaviour or management."

The results in the studies of Lindsley and Cutts are exemplified by the presence of 2.5 per second waves in 36 per cent of cases in the behaviour problem group and in 19 per cent of the normal group from the occipital areas in more than 5 per cent of the record. In the central region 2 to 5 per second waves were present in 52 per cent of the behaviour problem group and in 25 per cent of the normal group in more than 5 per cent of the record. There was overlapping in the two groups in amplitude and in per cent of time of the total record during which slow waves were present. Thus the amplitude range among the normal children was 9-42 microvolts and in the behaviour problem group 14-42 microvolts.

There appears to be a 100 per cent correlation between normal behaviour and normal environment in the control group and an overwhelming relation between adverse environmental factors and behaviour problem manifestations in the abnormal group. In the group with favorable environment the abnormal EEGs did not apparently influence the behaviour adversely and in the group with adverse environment the normal EEGs did not influence the behaviour favorably. Perhaps siblings of the children in the behaviour problem group adjusting well under similar circumstances would have constituted a more reliable control group.

The substitution of the term "immature borderline" and "immature abnormal" for borderline and abnormal, as proposed by Secunda and Finley(7) does not simplify the problem of interpretation and correlation. Furthermore the results do not justify use of the tracing as a measure for prognosis and treatment other than to regard the electrical cortical activity shown in an abnormal tracing as a probable or possible additional adverse factor. Gibbs' word of caution may be advisable at this point, namely that "it is probable that correlations exist between personality and the EEG but it is doubtful that so coarse an index as the amount of cortical activity will suffice to make them clearly apparent." It is certainly doubtful whether the measure we are at present using can be reliably correlated with the ill-defined and varied phenomena of behaviour exhibited by the subjects under consideration in these studies. It would seem that the difficulty lies in attempting to correlate one partially known and poorly defined phenomenon (behaviour) in terms of another partially known phenomenon (electrical activity of the cerebral cortex). Behaviour is a reflection of the total personality, not totally represented in cortical electrical activity at all times or perhaps at any time. It is conceivable that with refinement in technique of electroencephalography a reliable correlation between certain aspects or segments of behaviour and certain changes in the electrical pattern may be established.

It is not surprising that our present endeavors to measure the confused totality of behaviour as manifested in behaviour problem children in terms of cortical electrical activity have yielded results too complicated for clear interpretation.

Summary and Conclusions

The EEGs of the 20 best behaved boys in a junior high school class of 131 boys were compared with the tracings of the 20 most troublesome boys in the class. These represented extremes from the point of view of behaviour and adjustment in a given situation. The age range of the two groups was the same (13-16½ years). Choice of boys over 13 years of age made comparison easier because adult patterns are then already established and consideration of normal year to year variations of tracings in children below this age was thus made unnecessary. Social, economic and cultural background was similar in the two groups, thus eliminating an important variable found in the groups compared in all previous studies by other authors. The boys in the most troublesome group were behaviour problems at home and in the neighborhood, as well as in the school situation. The boys in the so-called normal group presented no difficulties of behaviour in school, home or neighborhood. There were 12 abnormal tracings in the first group and 11 in the second. Intelligence level did not in itself have any influence on the nature of the tracings.

The EEGs of the 10 best behaved and least delinquent boys in an institution for

delinquent boys and the 10 most chronic delinquents with the most severe and chronic types of behaviour disorder were similarly compared. Four of the former and 9 of the latter 10 boys showed abnormal tracings.

Results of comparison between intelligence, efficiency of performance and personality with type of EEG were also similarly contradictory, confusing and difficult to interpret. Individual case studies illustrated these contradictions and discrepancies over and over again.

The most consistent incidence of abnormal EEGs was found in the most poorly behaved institution group, in the group with the severest and most chronic disorders of behaviour. This would suggest that the finding of an abnormal cortical electrical pattern may be indicative of a physiological disturbance which influences behaviour adversely. However, the very frequent presence of abnormal rhythms and patterns of the same kind found by us and by other observers in children without behaviour disorders and of normal and abnormal tracings in apparently similar types of behaviour problem children makes it difficult to interpret the significance of the findings in the individual case. The EEG is of course valuable in the detection of hidden focal lesions and of cryptic epilepsy. The most that can be said at present for the value of other findings of dysrhythmia in behaviour problem children is that they may be regarded as a probable additional unfavorable personal factor, among many other factors, adversely influencing behaviour. Studies and results to date do not warrant further interpretation or clinical application in diagnosis, therapy or prognosis.

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INSULIN SHOCK THERAPY AFTER SEVEN YEARS[1]

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The present report is one in a series evaluating the results of treatment of schizophrenia, both before the advent of shock therapy and during the subsequent seven years of insulin therapy, in the Pennsylvania Hospital. These studies have been concerned with intra-hospital comparisons only, since the attitudes which enter into diagnosis differ from hospital to hospital as much as do the customs and rules which determine the kinds of patients who come to the hospitals. Similarly, it would be impossible, in a therapy as empirical as insulin shock, to compare the types given in two or more hospitals.

It is, of course, difficult to make comparisons between different series of cases, but it would appear that our previous rate of recovery, before shock treatment was instituted, varied from 10 to 20 percent. In order to accumulate a new control group of 100 consecutive cases without selection and treated prior to the introduction of shock therapy, we reviewed our records, starting at 1926, and took in order through that and preceding years all cases which had entered the hospital and were diagnosed by the same staff as schizophrenic. Of these 100 cases, which were followed for 5 to 7 years, 16 were recovered or much improved at the termination of their hospital stay, 16 were recovered or much improved at the end of the 5 years, and 14 were reported well at the end of a 6 to 7 year follow-up. Of these 11 steadily maintained recovery from the close of hospital treatment to the close of the follow-up: in the others the condition changed from time to time.

By insulin shock therapy we have treated a total of 251 schizophrenics. Of this number 138, or 54 percent, were recovered or much improved at the end of treatment. We have been able to follow 49 of these cases for 5 years; of these 22, or 41 percent, maintained their status. In comparison with this insulin treated group, the 100 control cases not under shock treatment showed a 16 percent recovery rate at the end of five years.

We have attempted to draw some conclusions from a comparative study of cases whose duration of obvious illness was five or more years before hospital admission. For the insulin group the terms of illness in such long-standing cases were as follows: nine had been ill for 5 years, ten for 6 to 8 years, eleven for 9 to 16 years, and three young patients had been ill all their lives. In seven of these chronic cases there was recovery or great improvement at the end of treatment but only two of these held their gains. The terms of duration of obvious illness before hospital admission in the control cases were as follows: two had been ill for 5 years, five had been ill for 6 to 8 years, two for 9 to 12 years, while in two cases the onset might be placed either at 2 or at 10 years before admission. Of these control cases only one showed favorable response to hospital treatment and this gain was not held.

The burden of chronicity rested on the insulin treated cases and was lighter on the controls. In all cases duration of illness of 5 years or more made for a poor outcome.

Figures such as these just presented cannot convey the numerous interesting and challenging qualitative aspects of treatment and follow-up work which must ultimately be taken into account in any theoretical surmises concerning the action and rôle of insulin therapy. Additional problems for study are implied in the following data:

Of the 138 patients who initially were recovered or much improved under shock treatment,

88 were recovered or much improved when last reported;
25 relapsed and remained relapsed;
3 relapsed and then improved;
1 relapsed and then recovered;
5 lost part of their gains;
and 16 demonstrated many irregularities of progress.

[1] Read at the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 15-18, 1944.

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Of the 49 insulin treated cases that could be followed for 5 years, there were two recoveries which occurred long after insulin treatment was discontinued, and four patients were unable to hold their recovered status during the sixth year of the follow-up.

Perhaps, in the final analysis, the years of health given to these cases are more important for the individual patients involved, the family groups in which they are functioning, and therefore for society in general, than are final statistics concerning the number recovered or relapsed at the end of an arbitrarily selected time period. The insulin treated patients enjoyed 251 years of health out of the possible 564 years comprising the collective follow-up periods. Out of approximately the same number of years, 551, which were amassed in the follow-up of the control cases, only 78 years of health were registered. This difference is attributable to the fact that a significantly larger percentage of insulin patients are brought to health as an immediate result of shock treatment. By the same token, the larger percentage of subsequent relapses must in part be a function of the larger absolute number of cases for whom some period of health was won.

The senior author, whose experience has spanned both pre- and post-shock eras, has felt that the quality of the remissions in insulin treated cases was of a much higher standard than in those cases not so treated. Contributing to this impression are the observations made possible in personal interviews, and the information contained in follow-up letters from the patients' physicians and relatives, and, gratifying enough, often from the patients themselves.

SPEECH IN SENILITY[1]

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Speech and Personality

Language is one of the main avenues of expression utilized by the personality. It is a complex type of human behavior which has long been known to reflect in some way the thoughts, feelings and other inner activity of the human organism. As a mirror of man, it has been studied at an impressionistic level for many centuries. It has been studied somewhat less casually by psychologists during the past hundred years. It has been only in recent years that linguistic phenomena have been more closely scrutinized, and given psychological formulation.

This new "objective descriptive" approach to language has been discussed in detail by Sanford (1942). In an exhaustive review of the literature he has summarized the relevant researches, plotted the outlines of the areas of investigation, and pointed out some of the pressing problems. Among the areas of investigation surveyed are the following: studies of literary style, language of the child, semantics, voice and personality, disorders of speech, and the speech in psychopathology. It is with this last aspect of language research that this paper is concerned, and more specifically, it deals with the speech of the senile patient.

Speech in Mental Illness

It is apparent to all observers that the various mental illnesses are characterized by deviations in verbal behavior. The flight of ideas of the manic, for example, constitutes a criterion for diagnosis of the illness. Speech is so consummate a reflection of human development that almost every aberration of personality is revealed in disorders of language.

Before 1938, the speech of the mentally ill was studied and described in only a general and impressionistic way. For the most part, these studies were only careful descriptive restatements of verbal behavior—behavior as seen by the clinical psychiatrist, unsubjected to experimental control. These observations have been summarized by Eisenson (1932) and Sanford (1942). The style of the manic is described as rapid, incessant, telegraphic—marked by distractibility, mispronunciation and flight of ideas, etc. The schizophrenic's speech is said to be of low abstraction, full of neologisms, marked by disarranged speech forms and diminished variety of form and content. The depressed patient is slow and monotonous of speech, complete and repetitive.

A more objective analysis of the speech of the mentally ill was made by Newman and Mather (1938). Experimental control was obtained by phonographically recording samples of speech while the patients read selections and spoke spontaneously. They employed a group of descriptive criteria to analyze language, including such categories as articulatory movements, pitch, tempo, resonance, vocabulary and phrasing, syntax, response and accessory vocal activity. On the basis of this inventory, they were able to distinguish between the speech characteristics of three syndromes described as classical depression; states of dis-satisfaction, self pity and gloom; and the manic state. For example, they concluded that the pitch range of depressive patients was narrow and pitch changes were stepwise, whereas in manic patients pitch range was wide and pitch changes gliding. In depressions, too, the level of style was colloquial, syntactic elaboration was meager, and articulation lax, while in manic syndromes the level of style was elevated, syntactic elaboration rich and articulation vigorous.

Another objective study of the language of psychiatric patients was made in 1940 by Balken and Massermann, working with psychoneuroses. They classified their neurotics in three groups and studied five patients in each group. Among the psychogrammatical

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categories they used was that of the verb-adjective ratio. This index was first described by Busemann (1925) who stated that the relative frequency of verbs and adjectives was correlated with emotional stability. The ratio was called the "action quotient" (aq) and was found by dividing the number of "active" expressions or verbs by the number of "qualitative" expressions or adjectives. "Active" expressions include all verbs except the auxiliary. "Qualitative" expressions include all adjectives, all participial adjectives and all adjectival nouns.

Whitehorn and Zipf (1943) studied the speech production of three psychiatric patients as exhibited in spontaneously written personal letters. They utilized a method of quantification which concerned the frequency of occurrence of different words in the samples. This criterion was interpreted in terms of opposing tendencies to repetitiousness and diversification. Repetitiousness indicates a tendency to increase the frequency of use of words; diversification the tendency to increase the number of different words.

One of the patients suffered from a transient schizo-affective psychosis, and was known to have a childish dependent attitude towards parent surrogates. She was shown to use words in one way which was similar to that of children. She formed a limited vocabulary of about 500 words, although her total vocabulary was approximately 5000, and formed them "at the expense of the rarer conceptual words."

Their second patient was a man with a paranoid condition, with a manic tendency, who showed several small irregular deviations.

The third patient was a young woman with paranoid schizophrenia, in whom was found a tendency to repetitiousness greater than the tendency to diversification. This finding was consistent for all words after about the first ten in rank. These workers indicate the possibility that the repetitiousness of the schizophrenic patient may be equivalent to egocentricity and also to autism. They also discussed the possibility that an autistic patient, in speaking, could ignore the requisites of social serviceability and understandability. "He might then find himself thereby verbally and conceptionally handicapped in attempting to solve 'neutral problems' set by a tester, and also in dealing with real problems in an actual world."

Speech of the Psychotic Senile Patient

The psychotic senile patient's speech may manifest many categories of abnormality and may show diverse degrees of change within each category. His speech may reflect the failure of memory which is so prominent a feature of senile psychoses and may therefore be replete with reminiscences, pauses, restatements and other changes. His language may reveal the delusions, hallucinations and disorientation which mark his illness. We are all familiar with these aberrations of behavior which are displayed in speech. However, no objective analysis of the speech of the senile patient has been reported—an analysis based on the criteria noted above.

The present study is concerned with the grammatical analysis of the speech of psychotic senile patients as compared with the speech of normal adults and children.

Procedure

Senile patients were asked to describe in their own words each of four pictures. The pictures used are those employed as part of the Stanford-Binet test to measure interpretation and reasoning. The patients were asked standardized questions to stimulate expression when they did not respond spontaneously at any length to the pictures. The responses were recorded verbatim by hand, a simple task considering the slow, hesitant speech of most of the patients. Replies of 100 words or more were obtained for each of the four pictures and a speech sample of at least 400 words thereby obtained for each patient. In many instances the replies were much longer. These replies were analyzed grammatically—that is, the frequencies of each of the eight parts of speech in each sample were computed.

Twenty-eight psychotic senile patients were studied in this way. Seventeen normal adults and three normal children were also studied, samples of speech being obtained and analyzed by the same methods. Verb-adjective ratios were also computed for the three groups.

Results

Grammatical analysis of speech samples: The analysis of the speech samples according to parts of speech is shown in Table I.

TABLE I

Analysis of Parts of Speech in Samples of Senile Patients, Normal Adults, and Normal Children, in Per Cent

	No.	Nouns	Verbs	Adjectives	Pronouns	Prepositions	Adverbs	Conjunctions	Miscellaneous
Senile patients	28	20.5	19.3	7.9	15.0	9.7	5.5	7.1	15.0
Normal adults	17	24.5	16.1	11.6	10.7	10.5	5.6	5.0	16.0
Children	3	27.3	12.3	8.7	7.7	10.0	5.3	6.7	22.0

The verbs, adjectives and pronouns demonstrate significant differences between the senile and the normal groups. In seniles, 19.3 per cent of the words spoken are verbs, in normal adults only 16.1 per cent are verbs. Adjectives constitute 7.9 per cent of the speech of seniles and 11.6 per cent of that of normal adults. The figures for pronouns are 15.0 per cent in seniles, 10.7 per cent in the normal adults.

The average verb-adjective ratios for the three groups are shown in Table II. There

TABLE II

Verb-Adjective Ratios (aq), and Adjective-Verb Ratios, Found in Three Groups of Subjects

	No.	Action quotient (aq) or verb/adjective ratios	Adjective/verb (No. of adjectives per 100 verbs)
Senile patients	28	2.99	21.7
Normal adults	17	1.52	78.8
Children	3	1.83	65.7

is a definite difference between the ratios of the senile and normal subjects; 2.99 as compared with 1.52. The average ratio found in the three children studied, 1.83, is similar to that found in adults.

Discussion

The parts of speech which manifest differences between the senile and normal subjects are the verbs, adjectives and pronouns. The significance of the differences in verbs and adjectives is considered subsequently in the discussion of the verb-adjective ratio.

1. The meaningfulness of the variation in frequency of pronouns is not clear. We might have expected, a priori, that senile subjects would utilize pronouns less frequently than normal subjects, because of the difficulties entailed in keeping the object of reference in mind. However, just the opposite finding was made. The pronouns in this study were not analyzed further into the categories of first, second and third persons. The first personal pronoun has received some attention in the literature as an index of egocentricity, and its decreasing use by the child as he grows older has been considered evidence of advancing socialization (Piaget, 1932; Markey 1928). The pronouns as a group, however, have not been thoroughly examined. The proportionately large use of pronouns may reflect the repetitiousness, hesitancy and "roughness" of the senile subject's language. Pronouns are short words and are frequently used to initiate sentences and phrases and are therefore perhaps more prone to repetition than other words. This quality of repetitiousness of pronouns was not studied statistically in our subjects, but the impression gained that pronouns recurred frequently because of this attribute of seniles' speech.

2. The average verb-adjective ratio of the senile group was 2.99, of the normal adults, 1.52. This ratio was first utilized by Busemann (1925) and was considered by him to constitute a measure of emotional stability. Balken and Massermann (1940) found that the verb-adjective ratio varied significantly among the three groups of psychoneurotics studied. They found the lowest verb-adjective ratio in the conversion hysterics, 1.35, as compared with 3.11 for the anxiety states, and 2.17 for the obsessive-compulsive-neuroses. The assumption was made that conversion hysterics are superficially free from emotional stress whereas the anxiety hysterics are less emotionally

stable. If this postulate is accepted these results seem to corroborate the studies of Busemann, who found high action quotients in the less stable children. The conversion hysterics used many adjectives, the anxiety states used relatively many verbs and the obsessive-compulsive patients fell between the two.

Boder (1940) made counts of verbs and adjectives in various American writings. He employed an index differing from that of Busemann, in that he placed the adjective rather than the verb in the numerator. The quotient adopted by him therefore indicates the number of adjectives per 100 verbs, and it is this index which is called the adjective-verb quotient or AVQ. (Balken and Massermann called their ratio the AVQ but they computed, instead, the original aq. of Busemann.) The following AVQs were found by Boder for different categories of writings.

Type of writing	AVQ (average)
Legal statistics	15.9
Private letters	21.9
Fiction	34.8
Poetry	35.7
Emerson's journals	47.1
Advertisements	78.2
Doctorate theses	87.7

Psychological analysis of the adjective-verb relationships was attempted in part by Boder (1940). He suggested the following considerations: 1. The adjective is a name for quantities—it involves elements of analysis and evaluation. 2. The adjective is a phenomena of speech complication and economy at the same time. It increases the number of words in a sentence, but makes fewer sentences necessary. Use of the adjective therefore seems to require a higher level of speech. 3. The adjective and noun used together constitute psychologically a single speech unit. Use of these units requires a creative linguistic attitude. 4. Placement of the adjective before the noun is a relatively new development in language. This order is found, for example, in modern German and English while the adjective follows the noun in Hebrew and Latin. This may suggest that the adjective as used in the English language reflects linguistic progress.

These considerations all indicate that a more complex linguistic ability may be required for the use of adjectives. The diminished employment of adjectives by senile patients may reflect simply this failing capacity to express themselves by means of the more complex mechanisms of speech.

Summary

The speech of psychotic senile patients was analyzed grammatically, and compared with that of normal adults and children. Pronouns, verbs and adjectives display the most prominent differences between the senile and the normal subjects. Pronouns are used relatively more often in seniles, verbs also more often, and adjectives less frequently. The implications of these differences are discussed.

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GROUP PSYCHOTHERAPY

A Superior Method of Treating Larger Numbers of Neurotic Patients[1]

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Before the war there were not enough psychiatrists to give adequate individual treatment to those suffering from psychoneurotic disabilities, and in many out-patient departments little pretense at effective treatment was made. Now that the military situation has reduced personnel, management of the neurotic patient has become more of a problem than ever in most civilian hospitals, while neurotic disabilities in the services are taxing the psychiatric personnel of the armed forces. Where group psychotherapy has been utilized encouraging results have been reported in military as well as civilian practice(1, 2, 3, 4), and the method has proved an effective means of giving adequate care to large numbers of patients.

Psychiatrists serving in busy general hospitals realize that the neuro-psychiatric dispensary is too frequently regarded as the end of the road. Patients are referred to it only after long, unproductive treatment by various physicians—quite often not until considerable resistance to psychotherapy has developed. Almost invariably such patients believe they are accused of imagining their illness, and frequently feel they are regarded as "nuts." They clutter up the clinics, annoy the personnel and eventually overwhelm the neuropsychiatric staff. Use of the group method can end this inadequate care and restore many patients who otherwise would not be benefited.

Our use of group psychotherapy in the out-patient department of the Presbyterian Hospital began informally as a time-saving procedure early in 1939 but has since become an established part of the out-patient department there and, more recently, at the Philadelphia General Hospital(5) and the University of Pennsylvania Hospital. Our groups are made up of patients who understand English, have average intelligence, present no disturbing symptoms such as tics, and are capable of emotional response. A preliminary interview with each new patient is desirable but many have benefited through no other contact with the neuropsychiatric department than class attendance. New patients are accepted at any session because this affords us the opportunity of repeating those principles which we wish all patients to understand. At each meeting we indicate to the group that they were referred to the class only after thorough investigation had failed to reveal evidence of destructive disease of the organs which appeared to be sick. We emphasize that severe physical distress can be produced by emotion, recalling to mind the physical discomforts of stage fright and the altered function which occurs from anger or other emotion. We point out that disturbances of appetite and digestion are common concomitants of worry. At each session we strongly emphasize that any symptom produced by emotion is very real—not imagined—but since such symptoms are not associated with destruction of organ tissue they can be relieved by correction of the faulty emotional state. We allude to prolonged emotional experiences such as anxiety, worry, sorrow, remorse, frustration, guilt, anger, resentment and others, and describe how these feelings may not only produce physical symptoms but may alter the personality and behavior of individuals without their being aware of change.

After these brief introductory and explanatory statements, reports of the patients are read. As they enter the classroom for each session the members of the group are requested to write a brief comment on their progress and to record any questions they would like to have discussed. These reports permit the leader to make positive suggestions and remarks on the material contained

[1] Read in part before the American Neurological Society, New York, N. Y., May 7, 1943, and in part before the Philadelphia Psychiatric Society, March 12, 1943.

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in them, while the nature of the comments usually arouses the interest of the newcomer. They also permit him to encourage those who have been regular in attendance and afford him an opportunity to cheer the progress of those present.

Following this period devoted to reading of the reports, a psychodynamic principle is discussed in some detail. As an introduction to this portion of the hour we usually review the rôle of the instincts and the continuous process of directing and adjusting our instinctive forces into socially acceptable behavior. In simple language we then explain some mechanism of the mind, using as examples manifestations that are readily recognizable. We encourage the patients to discuss these principles and find it surprising how readily they talk of their own problems and recognize their own deviations from the normal. They speak freely of their feelings and behavior, interpreting actions in terms of their newly acquired knowledge. Since the importance of previous experience, especially the early home life, is stressed as a factor determining personalities and behavior, many patients readily appreciate that they were inadequately equipped to compete with life because of faulty home direction, and are able to discuss unsatisfactory early home conditions with a healthy objective attitude. Such discourses are carefully guided, and, where possible, patients who have benefited by attendance are drawn into the discussions to provide encouraging comment and parallel experiences.

At some sessions the history of a patient is read without revealing the identity of the individual. The nature of the visceral complaints is first discussed and then the emotional conflicts revealed in the history are explained. Sometimes when patients whose cases are being reported are asked for comment, they frequently reveal that it is their problem or a similar one, and make significant and helpful remarks. Through such discussions patients often obtain suggestions which lead to the solution of their difficulties; at the least, they receive sympathy and encouragement to continue their efforts at self-improvement from the understanding and consideration expressed by others in the group.

After a period of twenty or thirty minutes devoted to discussion of a psychodynamic or psychotherapeutic principle or to a case, brief comment about the relationship between physical tension and increased reactivity of the nervous system prepares the patients for an interval of about five minutes devoted to instruction in how to obtain relaxation of muscle tension. It is recommended that effort be made to relax muscles not in use, and to be certain to become relaxed before retiring, thus insuring more restful sleep. This period of relaxation creates an attitude more receptive to suggestion, and following it the patients are given advice about the necessity of adequate rest; they are encouraged to interest themselves in new activities, to keep occupied, to plan their days, and to exert other efforts to live more effectively and enjoyably. The living of a life is often compared to the building of a home, ship or other structure, and the necessity of following a plan for best results is emphasized. Inspiring lines of poetry or other bits of wisdom may be presented for comment. Patients are urged to tell of previous experiences which inspired or encouraged them, and often they share stimulating selections of verse or prose which they feel have helped them. Many keep scrapbooks and notebooks, and the seriousness with which they turn their energies to self-improvement is most gratifying. Religious subjects are frequently introduced and the value of religion is always emphasized.

All the sessions are very informal and the patients are urged to ask questions and participate in all discussions. If someone is too self-conscious to participate during the session, he is encouraged to question some of the veteran members of the group. This action has prompted many of the older members to confide to the leader the responses they gave to such inquiries. To have a newcomer ask them a few questions gives such patients a sense of importance, and many of them date their own improvement from the time they tried to help someone else.

In a series of these classes most of the psychodynamic principles can be presented for discussion and psychotherapeutic measures projected to large numbers of patients. As a result of the group contact patients quickly lose their sense of isolation, one of

the most disturbing phases of their condition. The realistic revelations of other sufferers impress them; they lose their resentment at being considered neurotic, and work eagerly to become more adequate and more competent persons. As insight develops they become more effective members of the group and, eventually, social assets.

After three years of experience with the class method the "students" were sent questionnaires. Many of their answers are worthy of comment. In response to the questions: "If you have benefited from attending these classes, what particular feature of the session do you think has been most helpful?" a great number answered "realizing so many other 'normal-looking' people were similarly afflicted, was the means of restoring my courage." One patient responded, "I felt so isolated before I attended; now I feel that I have found people fighting the same thing I am fighting. They have helped me, and I know I can eventually be of some help to them." The loss of that sense of isolation impressed the patients more than anything else and can surely be regarded as one of the most effective mechanisms of the group.

A statistical analysis of the results of the first three years of the group therapy is interesting. One hundred and eighteen patients were sent questionnaires during a summer recess. Fifty responded and the following results were recorded:

Cured	9 patients			18%
Much improved	25 patients	Benefited	90%	50%
Improved	11 patients			22%
No change	5 patients	Not benefited	10%	10%

On checking our knowledge of the patients' state against their reported results we noted no great discrepancy in our appreciation of their condition and their own estimation. Among those who failed to respond to the questionnaire were many we regarded as being very much benefited. If the statistics were corrected to include the 68 who did not report as showing "no improvement," the following results would be obtained:

Cured	9 patients			8%
Much improved	25 patients	Benefited	38%	21%
Improved	11 patients			9%
No change	73 patients	Not benefited	62%	62%

Even these statistics indicate that the method has value when it is realized that the three years work represents less than 150 hours of "physicians time," less than one and a half hours time per patient, or about four twenty-minute sessions. The group attendance averaged 20 per session, or three minutes of the physician's time per patient per week. If only those who responded to the questionnaire are counted, each one would have received the equivalent of three hours of the physician's time. The 18 per cent of cures and 50 per cent markedly improved represent a good result for the time devoted and we feel this 68 per cent improvement represents the approximate results.

As experience increased results naturally improved. At first it was difficult to combat the resentment which some patients showed at being referred to a group and dealt with as such. This difficulty has decreased as those who have benefited lend encouragement to the newcomer and explain to him the benefits he may anticipate. Although the teacher avoids the use of the word "neurotic," patients frequently use the term in referring to themselves, and it has helped those who have been called "neurotic" to regard the term not as an opprobious epithet but rather as a medical condition. At one session when a patient asked, "What kind of person is a neurotic?" my efforts to define the neurotic state were not particularly enlightening until one patient interrupted and said "Ain't he a guy that don't know some of the answers and hasn't the guts to admit it, then makes a hell of a mess trying to bluff it through?" This is an understandable definition of the neurotic state and many other such definitions, which have answered their need for understanding, have been advanced by patients.

Most of the patients treated in the group have been neurotics and the larger number

have had visceral disorders as their chief complaint. Some psychotic patients have been admitted to the group but their numbers have been too small to warrant consideration of the benefits obtained. Blackman(6) has reported meetings on the wards as having distinct value to the psychotic hospital patient; Lazell(7) earlier reported similar benefits.

Of the various conditions treated the anxiety states have been most consistently benefited. Frustration neuroses and neurotic depressions have also reacted well, and many patients with states of reactive depression have been helped. Marked relief has been experienced in some obsessive states, since the innate exhibitionistic tendencies have undoubtedly been gratified by group discussion and the mechanism of obsession has been appreciated. Conversion hysterias have been few and results far from spectacular. Such patients are more prone to discontinue attendance than any other group. More consistent in attendance are the hypochondriacs, though the only benefit observed in this condition has been a diminution of their willingness to give "an organ recital" at every opportunity. Several were regular in attendance for more than a year or two but after the first few months, during which they talked volubly of their symptoms, they subsided because of the mild suppression of the teacher and the more virile dynamic attitude of the group.

Our experience has been exclusively with a civilian group, but one can visualize that the group method may be suitable if not ideal for application in military psychiatry. Here we have men under similar conditions who have shared the same experiences and have had similar training and aims. These common factors should quickly produce a group spirit that would be a powerful force in effecting the desired end, recovery. Rome (1) reports the military application of the method as being very efficacious.

In the last few years we have had referred to the group patients rejected or discharged by the armed services for psychoneurotic disabilities. One must extend sympathy to these boys who feel their rejection or discharge is a stigma from which they cannot recover. With the large number of rejections some provision should be made to rehabilitate those smarting under denial of the privilege of defending their country. Several have confided that it is bad enough now but they cannot bear to think of the day when their soldier buddies will return and ask questions. These boys constitute a special problem within the group and when their numbers are greater special classes will be formed.

Although the group clinic has not been a part of the formal instruction in psychiatry of any class of students, the interns, residents and others in attendance have been enthusiastic about its possibilities. At this time when there is need for the rapid training of psychiatrists in the management of the neuroses the group method ought to be considered in such a program.

It cannot be too strongly stressed that this method does not rely upon a strong emotional appeal for its efficacy. It is not a revival meeting type of session at which noble sentiments and stimulating pep talks are delivered. The sessions of the class are meetings at which sound basic principles of psychodynamics and psychotherapy are presented in the language of the patients, and all methods used to benefit the patient in individual interviews can be employed in the group. Those who participate in the discussions usually lend clarity and force to the leader's efforts, so that results obtained rival those derived from private treatment.

Summary and Conclusions

Four years experience with the group method indicates that it is one which may solve the problem of giving adequate psychiatric care to greater numbers of neurotic patients.

All of the psychotherapeutic methods of individual therapy are utilized, and their effect seems to be increased in the group because contact with other sufferers gives the patient courage and causes him to lose his feelings of isolation. He is inspired by his fellow sufferers to greater effort in his own behalf. As he improves and can offer encouragement to newcomers he gains a sense of being important in the lives of others. These mechanisms seem to give group treatment greater force than individual therapy.

The method permits students to observe and participate in a dynamic psychotherapeutic relationship and has been shown to be of value in military service.

The method will establish psychotherapy as a practical procedure just as the reduction in cost of manufacture of insulin and sulfanilamide has made them readily available.

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THE DEVELOPMENT OF A RESEARCH PROGRAM IN MENTAL DEFICIENCY OVER A FIFTEEN-YEAR PERIOD *

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The Wayne County Training School opened its doors in 1926.[1] Those responsible for its creation had set as its purpose increase in salvage among the higher grade mentally deficient. Institutional treatment and care of the mentally deficient in America had seventy-five years' experience back of its ideas and methods. If the purpose of the establishment of this new institutional venture was to be attained, research for possible better ways became a *conditio sine qua non.*

Research, in whatever field, is a call for the future. It cannot be undertaken otherwise than with a feeling of discontent with the achievements of the past and the hope for a possible improvement in the time to come. There are, however, limitations in research especially under institutional conditions: limitations with regard to the worthwhileness of the research project in respect to time and money required; limitations as to the immediate need; and limitations as to the possibility of practical applicability of the theoretical results. It seemed worthwhile, today, after fifteen years to review and evaluate the results of such a research program, originated admittedly with a selfish purpose solely to help the administration of the institution in the search for a new program, but which has sought none-the-less never to forget the major objectives of science.

Where did we stand in our scientific knowledge on the problems of moron and borderline defectives when the Training School opened in 1926?

Our knowledge on mental deficiency is derived mainly from four different disciplines. They are:

1. Social science, including administration.
2. Psychology including psychopathology.
3. Education, especially special education.
4. Medicine, especially neuropsychiatry.

Let us consider sketchily each field separately and discuss the main problems involved.

The original purpose behind the creation of public institutions for the mentally deficient was ameliorative. At the risk of delaying progress in our theme, I would urge you to read John Greenleaf Whittier's essay in 1848 on Peculiar Institutions of Massachusetts, where his deep religious soul discusses Dr. Samuel G. Howe's first mental hygiene survey on the problem of feeblemindedness in the Commonwealth. Practical forces, some might say natural, have determined, perhaps too largely, an asylum type of development in this field. It is within our memory that parole was formally recognized in law. And yet, even today, within the classic institution no particular differentiation of program for the higher grade deficient has been evolved to prepare him the better for his attempted return to the community.

If we were to increase salvage among the higher grade deficient, where the community objectionable characteristics of this type of individual are largely his threatening aggressive behavior, the program could not be satisfied with attempting merely to impart more academic knowledge or increase vocational skills but must be more vitally concerned with helping these individuals in their interpersonal relations, in their development of different emotional attitudes and in their creation of different mores.

Various experiments in the organization of our community life were made in many directions from the very opening of the training school. It may be sad, but it is none-theless true, that negative aspects seem the easiest patterns for institutions to adopt. Emphasis is much more easily laid upon what these children cannot do and why they shouldn't be permitted to try to do anything outside the narrowest possible circle of pre-

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scribed activities, particularly if the doing is the least bit noisy or otherwise disturbs an adult or an adult's viewpoint, rather than focusing on what they might do.

The attempt to develop a democratically self-determining cottage among the boys was made on several occasions, from the second year of operation on, but without continued success. The reasons were various but mainly related to the fact that while self-government was existent, it was existent only up to a point but not beyond that point; it was a form but not a whole substance. In 1935 we established in an area more than half a mile removed from the group of other cottages the Homestead Cottage. Whatever the principles of mental hygiene had taught us should be expected from an experiment in child living, but which we had not achieved in our earlier trials, has been obtained at this self-determining cottage.

The so-called Iowa studies were unknown to us at the time the Homestead Cottage was projected and started. Our gain in administrative relations with this cottage had been enough: so-called disciplinary problems with our older boys had been greatly lessened; the boys were happier; our employees in the other cottages were furnished a laboratory course of instruction constantly at their disposal; actually fewer employees are required in these two cottages (a second cottage had been established a year later). But actually, in addition to social growth, significant acceleration of intellectual growth became even more significant as later certain specifically designed educational ventures were introduced into the cottage program. Kephart [2-5] in particular has reported on these studies.

Still in the realm of the social science discipline, we have made carefully documented studies of all boys and girls discharged from the training school up to a date three years before the beginning of the study so that conclusions could be reached of their social acceptability after at least three years on their own in the community.

Forty-three per cent of all boys from the training school, who had been returned to the community with our approval prior to July 1, 1933 were found in a very carefully conducted personal survey made during the winter of 1937-38 to be totally self-supporting—even in these depth-of-depression days. Nineteen per cent of this entire number, in addition to supporting themselves, were also aiding in the support of others. An additional 29 per cent were classified as partially self-supporting. Kephart [6] and Ainsworth and Bijou [7] and Ainsworth have reported on these studies.

We are now engaged in testing out a manual on cottage operation written as a teaching device to facilitate the interpretation to cottage workers of the reasons for certain attitudes and methods based upon these investigations: this manual was prepared by Melcher-Patterson and McCandless.[9]

What was the challenge in 1926 from the contribution of psychology to the field of mental deficiency?

Binet's revolutionary attempt to "measure" intelligence had been translated to America by Goddard and further developed by him to fit American conditions. Stern's formula of the intelligence quotient had been adopted to make possible an apparently exact measurement of an individual's mental inventory. The 1916 revision of the Binet scale by Terman had made possible the use of "the test" by any school teacher who could afford to buy the book! For the keen observer, however, a rigidity of thinking about retardation in mental development became more and more apparent.

Was the I. Q. something to be accepted as constant and invariable? Was the currently accepted deterministic viewpoint of low I. Q. as settling all future personal problems of the child so tested to remain unchallenged? Any deviation from that viewpoint was sacrilegious in most educational circles at that time. And yet, if our efforts in the rehabilitation of the mental defective should be sustained in his readjustment to community life, it was necessary to demonstrate that this then general belief was a misconception.

We mention two very significant studies by Hoakley: [10, 11] the first in 1932 entitled "Variability of Intelligence Quotients" based on a study of the results of 1469 Stanford Binet examinations made on 550 different children at intervals varying from six months

to twelve years. This study, important as it is in many respects, is most important because of the inescapable evidence it presents that not even sixteen years is the upper age limit for intellectual growth. The other study, published in 1935 and in all respects a continuation of the same fundamental problem, was a "Comparison of the Heinis Personal Constant and the Intelligence Quotient." One of her conclusions from this study, that the P.C. is a more constant and more representative index than the I.Q., would, if adopted generally, serve to answer many of the questions so perplexing where such laboratory terms have to be used in courts and similar situations before laymen where intellectual constants and such "tomfoolery" details are just as much out of place as the details of Wassermann procedure would be.

More than just variability in I.Q. could be shown. Was the institutionalized mental defective condemned to "lower his I.Q.", as had been stated so often, or could proper and adequate training in an institution provide the necessary stimuli for a fuller development of such a child's limited capacities? The studies by Kephart,[5] just mentioned, and several others gave [24, 25] ample proof that, especially in the familial type of mental defectives, the success of such efforts could even be measured by a "heightened" I.Q.

Yearly examination of all children with a broad battery of standardized intelligence tests, non-verbal as well as verbal and collateral educational achievement tests, combined with psychiatric observation focussed upon personality reactions and psychogenetic origins, served only to mordant our impressions that knowing more about differences in manner of learning of our children was more important for our purpose than any other question confronting us and that until we could clarify this seemingly perpetual maze of qualitative vs. quantitative differences in our children's mental activities, we were to continue befogged. If we were to make even a step forward in the assignment given us, to increase salvage, research in education was inescapable.

In 1926, one hundred twenty-five years had passed since Itard's grandiose attack upon the educational possibilities, even of an idiot child, had shaken the pedagogical world. His attempt in spite of its failure—nowadays we may say he did not have the facilities to diagnose this child as severely brain-injured—awakened the educators to explore a hitherto forgotten field. Seguin's efforts contributed much to popularize special education in the United States. But the field remained quite sterile until, at the beginning of this century, Montessori in Italy and Decroly in Belgium, both psychiatrists, opened new avenues of educational approach. Unfortunately both seemed dissatisfied with their success in the field of mental deficiency and turned back to work with normal children. The Montessori method of "sense training" is still in use for the low-grade child; the Decroly method never became popular in the United States because we developed independently the "activity program" and "progressive education." For our purposes neither method seemed to offer promise: the one was too specific and the other too general in its scope.

In 1926 Orton's publications(1) from Iowa on strephosymbolia were attracting considerable attention. They seemed to offer a starting point to learn more about these undoubted differences in manner of learning.

For several years reading disability among our children was the point of attack. The results were fruitful. We discovered that cases of reading disability identical with reading disability of normals existed among our children: that they existed among them in about the same proportion as found among normal children, about 11 per cent; that these disabilities could be overcome; that methods of treating the disabilities of normal children were not applicable to our children; indeed, that the very method perhaps, used today to teach normal children to read might be a prominent factor in producing the disability; that specific methods of treatment could be devised to teach our children whereby spectacular results followed; that children six, seven and eight years in school without learning to accomplish even first grade reading could be taught to read up to their mental age level at a rate two to three times as fast as the normal child learns to read: that a method of prevention was probably possible.

This field of investigation was very fruit-

ful. It stimulated the imagination of many persons important to the support of the total project who had been perhaps lukewarm to the possibility of anything but a relatively barren future. The results of remedial teaching could be measured and described in terms that anyone, not merely an educator or a psychologist, could understand.

An impressive series of publications of original investigations by Hegge and his associates [41-59] resulted from this area of disabilities. The most important book yet written on the teaching of reading to this type of handicapped child grew out of these studies —the book by Kirk(2).

We would call particular attention to the transformation that takes place in the rebellious, anti-socially-headed non-reader child, twelve, thirteen, or fourteen years of age, when he comes to recognize that at last he is going to learn to read.

Perhaps the most important conclusion from our researches in this field was the conviction that reading disability, so far as the higher grade defective was concerned, was largely the result of the attempt to teach the child to read before he was prepared for the experience.

Upon the theory that the most vital educational need for the younger children entering the training school is not more academic drill, but a longer preparation period in which to acquire more of the foundation of unfolded experience with which normal children just naturally start their academic training, we began a few years ago to create an environment which shall meet the younger child's needs and stimulate him to mental activity in accordance with the principles which have been so successfully demonstrated in pre-schools for very young (normal) children and perhaps kindergartens.[65]

This program has been under the continuing direction of Ruth T. Melcher-Patterson.[66-70] Its results in terms of effect upon intelligence, social maturity and personality adjustment, also later academic achievement, have been fully reported in detail in the literature as well as the details of the organization of the unit and its methods.

You may ask why I have not discussed earlier the contributions and challenges we received from the medical sciences. Isn't Tredgold who wrote the first and still standard book on mental deficiency in English, a physician? Is not his classification of primary and secondary amentia still in use? Is not his concept of social competence of the feebleminded the most widely used criterion in the circles of lawyers and laymen? No one would, or could, minimize the contributions of Tredgold, or of Fernald in the United States. However, for our special problem—the rehabilitation of the high grade mentally defective—the usual fields of brain pathology, biochemistry, genetics and clinical syndromology offered no prospects. Child psychiatry outside the child guidance movement, which has always had thumbs down on the mental defective, was little known. Homburger's(3) standard work had just been published in Germany. Kanner's(4) outstanding treatise was to follow only many years later.

There should be no wonder that our first studies in the medical field were medical researches pure and simple and not in any sense research in the field of mental deficiency as such.

H. S. Willis [80] and associates reported on sensitization from repeated injection of the new PTP tuberculin, a hitherto unobserved phenomenon turned up in the course of studying the incidence of tuberculosis in our population.

Ferry and associates,[76-79] among a long series of studies in immunology, worked out important developments in the treatment of meningococcic meningitis which were to reduce the mortality of that disease another 50 per cent below the point where Flexner had left it.

Huddelson,[81] and a group of research associates of the Rockefeller Foundation spent several days a week for two years studying the possible presence of brucellosis in our population.

Bunting [84] directed over a period of several years a rather elaborate study on dental caries.

Lewis studied the urine of almost a thousand children with particular interest respecting the presence of phenylpyruvic acid.

Watson and Moehlig investigated the growth pattern in a group of children showing extreme retardation in physical growth

as well as endocrine anomalies and then the results of administration of specific growth hormone. These studies are still in progress under Watson and Strauss.[87]

None of these studies touched our essential problem.

The very earliest impressions we gathered of our children were those of extreme heterogeneity. In a group of mental defectives from which all idiots and imbeciles were excluded, to use the descriptive expression of heterogeneity may seem strange but to the clinical psychiatrist no other impression would be possible.

With respect to this early perplexity over the very evident question of qualitative vs. quantitative differences in the learning processes, notwithstanding the tremendous advances in our knowledge of our children from the extensive research I have just sketched so briefly, we still continued, in 1937, perplexed.

The National Research Council through its Committee on Psychiatric Investigation had published in 1934(5) a report on the Problem of Mental Disorder. Feeblemindedness is barely mentioned anywhere in all that exhaustive report of practically four hundred printed pages. Meyerson(6) can be said to have been the only contributor even to mention the subject and I quote from his contribution to "Current Points of View"(7):

> . . . . as a matter of fact, there is no such unity as is implied in the term feeblemindedness.
>
> There are, as a matter of fact, groups of individuals who present as part of the syndrome by which they are differentiated from the normal the symptom of lowered intelligence. Thus the cretin, the Mongolian imbecile, the feebleminded with organic brain-disease, brain-injury, post encephalitis, etc., represent groups not at all biologically related to one another, except in the appearance of mental defect.
>
> The quality of the research done in feeblemindedness is on the whole inferior because it has been dominated by the misleading concept that feeblemindedness is some kind of biological unit. Here and there work has been done on the anatomy of the brain of the feebleminded. Very creditable studies have been done on the cretins because this subject linked itself up with the definite subject matter of endocrinology. A few radiographic studies have appeared. Sporadic biochemical papers appear in the literature. Most of the work on feeblemindedness appears in psychological studies, which really only measure the quantitative effect but give us no hint as to causation. Surveys galore have been made at great expense largely to bolster up preconceived ideas. It is a striking commentary on the schools for the feebleminded that very few of them have clinical directors, and one can count on the fingers of one hand the places where pathology, biochemistry and physiology are used in the studies of the hypophrenias. This great problem needs clinical investigation in all its forms. The psychological and sociological studies should go on; but the basic investigations into the nature of the individual who is feebleminded can hardly be said to have started.

In 1937, through the support of the McGregor Fund, research at the training school was greatly expanded by the addition to the research staff of Heinz Werner, experimental psychologist, and Alfred A. Strauss, child psychiatrist. From the collaborative endeavors of these two men and their associates, has come much to answer this persistently perplexing problem of qualitative vs. quantitative differences.

Typology had not hitherto been considered a matter of very great significance beyond the question of expressing etiology. Even Meyerson didn't suggest any importance attaching to the subject beyond differential diagnosis of origin.

Strauss, a pupil of Goldstein, had started in 1930(8, 9) to apply the findings of brain-neurology in the field of mental deficiency. After years of study in developmental neurology he has succeeded in establishing clinical criteria for differentiation between the brain-injured, exogenous, and the familial, endogenous, type of feeblemindedness.[20-26] By evaluating isolated reflex disturbances in brain-injured children, usually overlooked or pushed aside as not significant, he has crystallized an organic behavior syndrome diagnostic even in children where these residual isolated signs were absent.

In collaboration with Werner[27-40] who contributed his vast experience in genetic and experimental psychology, the foundation was laid for a psychopathological analysis of perceptual and conceptual differences between the exogenous and the endogenous type of mental deficiency. Those differences in fundamental aspects of behavior, now confirmed by objective laboratory demonstration, give new and vastly different significance to the old problem of type of defectiveness. The results of Strauss and Werner's investigations are ample proof of

the usefulness of Gelb and Goldstein's(10) pioneering approach relative to the psychopathology of brain-injured adults on the basis of Gestalt-psychology.

Several of these researches have been presented before this section: in 1939, "Behavior Differences in Mentally Retarded Children Measured by a new Behavior Rating Scale";[26] in 1940, "The Mental Organization of the Brain-Injured Mentally Defective Child";[32] in 1942, "Comparative Psychopathology of the Brain-Injured Child and the Traumatic Brain-Injured Adult."[36]

Others have been presented before the American Association on Mental Deficiency and psychological groups. We are convinced that these researches meet Meyerson's(11) challenge that "basic investigations into the nature of the individual who is feebleminded can hardly be said to have started." The appearance in the current literature of the terms exogenous and endogenous in the sense developed in these studies, shows how quickly the usefulness of these differentiations has been recognized by workers in the field.

To touch one important implication of this new classification we must turn back to the field of education. The classical system of instruction for mentally defective children is based overpoweringly upon the quantitative concept of mental deficiency. Hollingworth (12) has stated that "feebleminded children differ from ordinary children only in amount of ability, not in the kind of abilities, they possess. No mysterious or unique matter or method is necessarily required in the task of training them. They can learn the same things that other children learn up to the limits of their capacity." Some variety of that formulation governs most educational thinking and practice in this general field even today.

Statistical studies[24, 25] in our own school showed that the endogenous, or familial, defective child tended to advance educationally through the school opportunity given him while the brain-injured, or exogenous, defective child tended to lag behind: i.e., the quantitatively defective profited, the qualitatively different child, so far as brain function is concerned, lagged behind.

There was a challenge here that could not be avoided. The results of the applications of methods that Strauss(13) had developed in the education of individual cases earlier as adapted to class situations with brain-injured defective children is just now reaching publication after three years' developmental experimentation.[71-75]

In the field of special education of the feebleminded in general, Werner,[12-19] the experimental psychologist, brought his techniques to bear for the first time and gave us the opportunity to see what functional analysis of psychological processes might contribute to the understanding of differences in learning of mine-run feebleminded children.

I quote from a letter which Allport, professor of psychology at Harvard University wrote me:

> We all know that the empirical, rough-and-ready devices employed by mental testers have a limited value in disclosing the true nature of mental deficiency. Indeed, these tests are now known to mask important functional disorders that presumably underlie mental handicap. Through their fresh attack upon the subject and through their discovery of some basic patterns of mental handicap, I believe that Werner and Strauss are making significant discoveries that promise eventually to improve our understanding and therefore our methods of treating the different kinds of mental retardation.

I have tried to present to you the high lights of the development of a research program in mental deficiency over a fifteen year period under the conditions as outlined in the beginning. We are well aware of many gaps in its texture: of many existing problems we have not touched. Many ventures I have not even mentioned: excursions into drug and allied therapy,[86-88] speech disorders,[60-64] electroencephalographic studies now under way and some others.

The most important problem of all—which will become still more significant in the future—concerns studies on personality and group relationship. We have utilized, for example, the measurement of interpersonal relationships in groups by the Moreno technique:[2] we have studied group formation under democratic and autocratic leadership according to Lewin's hypotheses;[8] a study on the personality make-up of the brain-injured child[37] is to be published soon. These results all enter into administrative usefulness. The most important problem of

the personality of the high grade defective, his reactions and his constitutional deviations, is far from being solved. We see in Sheldon's new books(14, 15) on constitutional psychology one possible approach to it.

Whatever the future will bring we do not know. We have followed and will follow in our research efforts principles which have been so excellently expressed on a similar theme "The World We Want," in the Christian Science Monitor recently, by the great Spanish philosopher and politician, Madariaga(16). He says: to see the way clear, we have:

(1) To define what is desirable,
(2) To define what is possible at any time within the scheme of what is desirable,
(3) To carry out what is possible in the spirit of what is desirable.

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AGE AND ELECTROENCEPHALOGRAPHIC ABNORMALITY IN NEUROPSYCHIATRIC PATIENTS[1]

A Study of 1593 Cases

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The pioneer studies of Berger(1), Smith (2, 3, 4, 5) and Lindsley(6, 7, 8) showed conclusively that in the early years of life the electroencephalogram is characterized by slow rhythms and that the activity of the cortex becomes progressively faster with advancing age. As yet no statistically reliable standards are available for evaluating the normality of the EEG in the younger age ranges, nevertheless it has been customary to apply certain coarse adjustments for age in classifying the EEGs of children. At approximately 13 years of age, an essentially adult pattern is evolved. After that age, the EEG remains relatively stable, but certain gradual changes have been described(9, 10, 11, 12, 13). Although these changes are less evident than those that occur in childhood, they may be significant and it may be hazardous to disregard them. They are commonly disregarded at present, for adult EEGs are customarily classified according to one set of rigid criteria without regard for age.

Relatively little is known concerning the changes in brain rhythms during middle age and the senium. There are indications, however, that old age, particularly when associated with rapidly declining faculties, is accompanied by still further alterations in the EEG(14, 15). Does the failure to take the changes with age into account lead to errors in electroencephalographic classification? The present study attempts to answer this question as it applies to the classification of EEGs of patients with neuropsychiatric disorders.

In such a study the type of clinical disorder is an important variable, and it has been given due consideration. Even though a large number of EEGs have been collected, it is obvious that the study of a particular neuro-psychiatric disorder over a broad range of years is impossible in certain instances. For example, no patients with senile dementia are encountered in the younger age groups and few, if any, patients diagnosed primary behavior disorder are found in the older age range.

The present series of neuropsychiatric cases with brain wave studies is sufficiently large to be of value as a standard for comparison and as a guide to other workers in electroencephalography. Unfortunately, a similarly large series of tracings on normal individuals over the same age range is not as yet available and to some extent this is an impediment to the full interpretation of the results. As so often happens, the abnormal is available for study before the normal. However, the consistency of certain over-all trends in this diversified material seems too definite to be due to chance, and the large size of the present sample allows it to be broken up into various sub-groups which can be compared with each other. The results appear to warrant conclusions of practical and theoretical importance.

Material and Methods

The clinical records and EEGs of 1,593 neuropsychiatric cases admitted to the Boston Psychopathic Hospital form the basis of this study. These cases consist primarily of acute mental problems admitted to a diagnostic and distributing center serving a wide metropolitan area. An additional group of 240 normal control subjects is also considered; this consists of nurses, medical students, doctors and hospital personnel between the ages of 18 and 40. Ninety per cent of the control group were between 20 and 30

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years of age. The percentage of abnormal EEGs among the controls was 10 per cent which agrees fairly well with the percentage of abnormality obtained in most similar control groups.

Electroencephalograms were obtained with a Grass six-channel instrument while the patient reclined with eyes closed in a darkened room. Electrodes were applied over the frontal, parietal and occipital areas of both hemispheres. Both monopolar and bipolar leads were used; the latter were found particularly useful in eliminating extraneous muscle potentials in tense and restless patients.

The records were arbitrarily classified as "normal" for all ages if the activity consisted predominantly of waves with a frequency between 8 and 12 per second, and if only mild or moderate alteration of this basic pattern occurred during two minutes of overbreathing. The records were considered arbitrarily "abnormal" for all ages if a rhythm slower than 8 per second or faster than 12 per second prevailed, or if a remarkable change in the pattern in terms of increase in voltage and slowing of the frequency occurred during overbreathing, This classification of "normal" and "abnormal" is essentially similar to that set forth in greater detail in a previous communication(16).

If the frequency in a record was outside the "normal" range, the record was subclassified into *slow* (S) or *fast* (F) on the basis of the predominant rhythm. Certain tracings presenting no clear predominance of either slow or fast rhythm, but a mixture of slow and fast rhythms were classified *mixed slow and fast* (S & F).

Results

The distribution of all cases according to clinical diagnosis and age is shown in Table I. Under each age group are recorded the numbers with normal and abnormal EEGs and the total number of cases for the age group. Abnormal EEGs are divided into abnormal slow (S), abnormal fast (F), and abnormal mixed slow and fast (S & F). At the bottom of the table are recorded the totals for each age group and the total of normals, abnormals, slow, fast, and mixed slow and fast. The latter are also expressed as percentage of the total number of cases in the age group. Thus, in the age group *Under 15 years,* a total of 51 cases (taking all the clinical conditions together) were studied of which 22 had normal EEGs (43 per cent), 14 were abnormally slow (27 per cent), 2 were abnormally fast (4 per cent), 13 were mixed slow and fast (26 per cent), and these last three groups together make a total of 29 cases with abnormal EEGs out of 51 (a total of 57 per cent abnormal).

The number of cases in the various age groups varies considerably (Table I). This variation is of course determined by the age distribution of cases in the separate neuropsychiatric disorders. Under 15 years of age cases with the diagnosis of psychosis with mental deficiency, psychopathic personality or behavior disorder and schizophrenia predominate. The majority of cases in the age group 25 to 35 years are diagnosed schizophrenia, psychopathic personality or behavior disorder, psychosis with mental deficiency and psychoneurosis. In the older age group 55 and above, most of the patients are diagnosed senile and arteriosclerotic psychosis, involutional psychosis and manic-depressive psychosis. When the clinical categories are considered separately, a different age distribution is found for each. Thus, schizophrenia has a peak between 25 and 35 years. In psychopathic personality and behavior disorders a peak occurs in the 15-25-year range. Manic-depressive psychosis has a broad plateau in the middle age range; psychosis with mental deficiency in this series is primarily a disorder of the younger age groups, and involutional psychosis reaches a maximum between 45 and 55 years. Senile and arteriosclerotic psychosis is highest after the 55th year, and alcoholic psychosis has a peak at 35 to 45 years.

At the right in Table I are the total number of cases studied electroencephalographically in each clinical diagnostic category, the number and percentage with abnormal EEGs and the number and percentage with abnormal slow, fast, or mixed slow and fast types of record. The electroencephalographic classification of all cases, disregarding age and diagnosis, is shown in the lower right of Table I.

TABLE I.

DIAGNOSIS	UNDER 15 YEARS						15-25 YEARS						25-35 YEARS						35-45 YEARS					
	Normal	Abnormal				Total For Age	Normal	Abnormal				Total For Age	Normal	Abnormal				Total For Age	Normal	Abnormal				Total For Age
		S	F	S&F	Total			S	F	S&F	Total			S	F	S&F	Total			S	F	S&F	Total	
SCHIZOPHRENIA	5	2	1	0	3	8	97	7	11	11	29	126	136	8	14	19	41	177	76	5	4	15	24	100
PSYCHOPATHIC PERSONALITY & BEHAVIOR DISORDER	7	1	0	1	2	9	126	43	4	16	63	189	50	4	5	5	14	64	11	1	2	3	6	17
MANIC-DEPRESSIVE DEPRESSED	0	0	0	0	0	0	18	1	2	4	7	25	35	4	12	4	20	55	32	1	5	3	9	41
MANIC-DEPRESSIVE MANIC	2	1	0	0	1	3	14	2	3	4	9	23	15	4	2	4	10	25	11	1	3	4	8	19
SENILE & ARTERIOSCLEROTIC PSYCHOSIS																								
PSYCHOSIS WITH MENTAL DEFICIENCY	7	10	1	12	23	30	34	13	1	13	27	61	12	2	2	3	7	19	3	0	1	1	2	5
PSYCHONEUROSIS-MIXED	1	0	0	0	0	1	46	8	2	13	23	69	43	5	7	9	21	64	28	5	3	8	16	44
INVOLUTIONAL PSYCHOSIS	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	1	1	11	0	5	2	7	16
ALCOHOLIC PSYCHOSIS	0	0	0	0	0	0	11	0	0	1	1	12	29	1	5	3	9	38	52	1	2	9	12	63
TOTALS	22	14	2	13	29	51	347	74	23	62	159	506	320	28	47	48	123	443	221	14	25	45	84	305
PERCENTAGE FOR AGE GROUP	43%	27%	4%	26%	57%		69%	15%	5%	12%	31%		72%	6%	11%	11%	28%		73%	5%	8%	15%	27%	

This table shows the data involved in this study of age, psychosis and electroencephalographic abnormality. Under each age group are presented the number of normal and abnormal cases and the total number of cases. The number of abnormal cases is subdivided into abnormal *slow* (S), abnormal *fast* (F), and abnormal *mixed slow and fast* (S & F). At the bottom of the table these data are summarized and expressed as percentage of the total population in the age group; to the right of the chart these data are summarized for each diagnostic category.

and expressed as percentage of the total population in the age group; to the right of the chart these data are summarized for each diagnostic category.

TABLE I—CONTINUED.

DIAGNOSIS	45-55 YEARS						55 + YEARS						TOTAL	TOTAL ABNORM. & % ABN.	TOTAL S & % S	TOTAL F & % F	TOTAL S & F & %S&F
	Normal	Abnormal				Total For Age	Normal	Abnormal				Total For Age					
		S	F	S&F	Total			S	F	S&F	Total						
SCHIZOPHRENIA	35	3	3	1	7	42	9	1	0	2	3	12	465	107 (23%)	26 (6%)	33 (7%)	48 (10%)
PSYCHOPATHIC PERSONALITY & BEHAVIOR DISORDER	7	0	7	0	7	14	1	0	0	1	1	2	295	93 (31%)	49 (17%)	18 (6%)	26 (9%)
MANIC-DEPRESSIVE DEPRESSED	9	0	3	1	4	13	6	0	4	1	5	11	145	45 (31%)	6 (4%)	26 (18%)	13 (9%)
MANIC-DEPRESSIVE MANIC	4	0	3	1	4	8	2	0	0	2	2	4	82	34 (42%)	8 (10%)	11 (13%)	15 (18%)
SENILE & ARTERIOSCLEROTIC PSYCHOSIS	7	2	1	0	3	10	10	9	3	5	17	27	37	20 (54%)	11 (30%)	4 (11%)	5 (13%)
PSYCHOSIS WITH MENTAL DEFICIENCY	0	0	0	0	0	0	3	0	0	0	0	3	118	59 (50%)	25 (21%)	5 (4%)	29 (25%)
PSYCHONEUROSIS-MIXED	14	2	5	5	12	26	12	0	1	1	2	14	218	74 (34%)	20 (9%)	18 (8%)	36 (17%)
INVOLUTIONAL PSYCHOSIS	19	0	12	7	19	38	5	0	5	4	9	14	70	36 (51%)	0 0	22 (31%)	14 (20%)
ALCOHOLIC PSYCHOSIS	28	3	3	4	10	38	8	1	1	2	4	12	163	36 (22%)	6 (4%)	11 (7%)	18 (11%)
TOTALS	123	10	37	19	66	189	56	11	14	18	43	99	1593	504	151	148	205
PERCENTAGE FOR AGE GROUP	65%	5%	20%	10%	35%		56%	11%	14%	18%	43%			32%	10%	9%	13%

Electroencephalograms in Various Neuropsychiatric Conditions

Using the term "neuropsychiatric condition" broadly (to include the numerous forms of psychoneurosis, behavior problems, etc., seen in this hospital) and accepting the clinical concepts and diagnostic criteria used in this institution, we have studied the electroencephalogram in the various disorders with special attention to deviations from the average limits of frequency and also to unusual vulnerability to overbreathing.

In Fig. 1, the various neuropsychiatric conditions are arranged in order of ascending

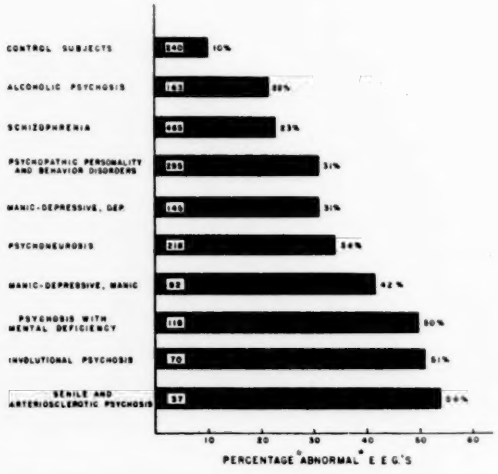

Fig. 1.—Percentage of abnormal EEGs in various neuropsychiatric disorders and controls. The total number of cases in each group appears in the small white rectangles in each stripe.

percentage abnormality. The number of cases in each clinical category is indicated within the appropriate stripe. Separate treatment is given to manic-depressive depressed and manic-depressive manic cases not only because of the markedly divergent clinical manifestations in the two phases, but because there is a difference in the incidence and type of electroencephalographic abnormality in these two phases. Eleven per cent more abnormality was found in manic patients than in depressed patients, and more slow and less fast activity was found in manic than in depressed patients.

If the abnormal EEGs are given further consideration from the standpoint of type of abnormality (predominant slow, fast or mixed slow and fast activity), certain findings stand out. Involutional psychosis and manic-depressive depressed psychosis are both conspicuous for a high incidence of abnormal fast activity. [Whether this phenomenon is primarily a characteristic of the EEG of depressed patients or whether there is a confusion between the two diagnostic groups remains to be seen.] In senile and arteriosclerotic psychosis, psychosis with mental deficiency and psychopathic personality and behavior disorder, abnormal slow activity has a peculiarly high incidence. Mixed slow and fast activity predominates in psychosis with mental deficiency, manic-depressive psychosis in the manic phase, involutional psychosis and psychoneurosis.

Age and Electroencephalographic Abnormality

In the preceding section, an over-all picture of the amount and type of electroencephalographic abnormality in the various neuropsychoses was given. However, it is desirable because of the great differences in age incidence in these several conditions to determine the extent to which age alone may account for the results. An analysis of the percentage of abnormal EEGs as a function of age (and without regard to the clinical diagnosis) is shown in Fig. 2. A rapidly rising incidence of electroencephalographic abnormality is found toward both extremes of life. Under 15 years, 57 per cent of the patients had abnormal EEGs, and over 55 years of age, 43 per cent had "abnormal" EEGs. The curve has a hyperbolic form, and the lowest values of abnormality are between 25 and 45 years of age when the incidence of abnormal EEGs for all the psychoses considered together is 27 to 28 per cent. It should be re-emphasized at this point that "normality" and "abnormality" are determined according to uniform criteria and that activity outside the 8 to 12 per second frequency range is arbitrarily "abnormal" for the purpose of this work regardless of age or diagnosis.

Our normal control group (240 cases) is distributed over the age range between 18 and 40 years with 90 per cent of the cases

between 20 to 30 years. In this group the incidence of abnormal records is 10 per cent. Gibbs, Gibbs and Lennox(17) have unpublished data which shows a rising incidence of rhythms outside the 8 to 12 per second range in normal persons towards both ends of life. It would therefore appear that in normal individuals as well as in neuropsychiatric patients a hyperbolic curve best describes the relationship between age and electroencephalographic abnormality.

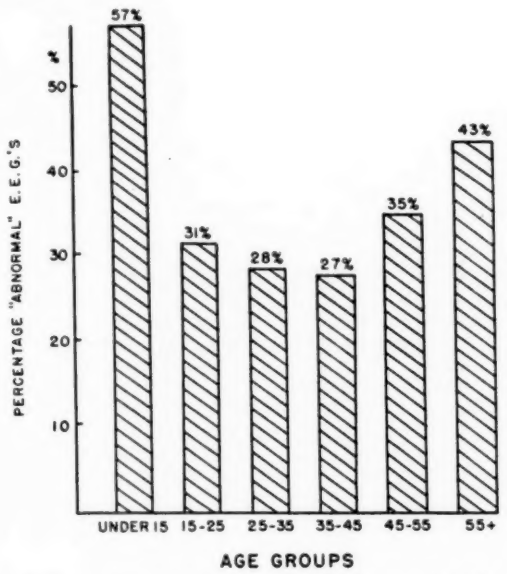

FIG. 2.—Percentage abnormal EEGs as a function of age. This graph shows the percentage abnormality obtained in a group of 1,593 neuropsychiatric patients studied as a whole without special consideration to type of mental illness.

AGE AND SPECIFIC TYPE OF ELECTROENCEPHALOGRAPHIC ABNORMALITY

It is clear from the above that the amount of electroencephalographic abnormality at different ages varies so much that the factor of age cannot be neglected in the appraisal of the EEG in any single clinical condition. If analysis is carried a step further and the specific types of EEG are considered in relation to age, other important trends are revealed. Slow activity is found to have a steeply descending curve (Fig. 3) until age 55, after which there is a rise in the incidence of slow records. At its highest point (under 15 years), the incidence of slow records is 27 per cent; at its lowest point (35 to 55 years), 5 per cent. In other words, there is over five times as much slow "abnormality" in the early years as in the 35-55-year range. It is of interest that in the oldest group (55+ years) the slow activity tends to reappear in the electroencephalographic pattern.

The reverse is true of "abnormal" fast activity (Fig. 3) which rises sharply from 4 per cent in the early age group to 20 per cent at 45 to 55 years, after which there appears to be a decline in fast activity. Thus, below 55 years there is a five-fold increase in incidence of fast activity as age advances,

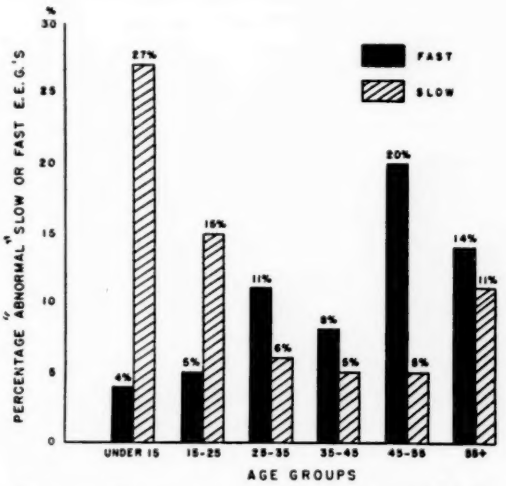

FIG. 3.—Percentage abnormal *slow* and *fast* EEGs as a function of age in 1,593 neuropsychiatric patients.

and a decrease to one-fifth in slow activity. The most slow and the least fast activity are found in the youngest age group, and the most fast and least slow activity are found in the 45- to 55-age range.

If records with mixed slow and fast activity are plotted against age, a relatively high incidence of this type of abnormality is found in youth and old age (26 per cent and 18 per cent respectively) with a lower incidence in the years between; thus, the curve for mixed slow and fast resembles that for total "abnormality."

In experimenting with the data, the numbers of slow, fast and mixed slow and fast EEGs were expressed not as the percentage of the total number of both normal and abnormal records as described above and

illustrated in Fig. 3 but as the percentage of total number of *abnormal* records in the various age groups. It so happens that viewed in this way, the trends are the same as those indicated in Fig. 3, although of course the absolute percentages are different. In other words, the incidence of abnormally slow records falls throughout the first five decades of life and the incidence of abnormally fast records rises throughout the first five decades when calculations are based either on the total number of cases in an age group or on the number with abnormal EEGs.

Age, Psychosis and Electroencephalographic Abnormality

To what extent does the age incidence of abnormality in the psychiatric population as a whole explain the incidence of electroencephalographic abnormality in the different clinical categories? The least incidence of abnormality in all the neuropsychiatric conditions is found in alcoholic psychosis and schizophrenia; the greatest incidence of abnormality is found in psychosis with mental deficiency, involutional psychosis and senile arteriosclerotic psychosis. The last two are diseases of late middle age and old age when the incidence of abnormal EEGs is high. Psychosis with feeble-mindedness in the present series is primarily a disorder of the younger age group when the incidence of abnormal EEGs is also high. Alcoholic psychosis and schizophrenia occur predominantly in the three decades from 15 to 45 years when the incidence of abnormal EEGs is low.

With regard to fast and slow activity, it should be noted that considerable fast activity is found in involutional psychosis and this is consistent with the findings for the age range in which involutional psychosis tends to occur. In psychosis with mental deficiency and in psychopathic personality, slow activity is common, and this also would be anticipated from the age distribution of these conditions.

In Fig. 4, an attempt has been made to show the relationship between all three variables—age, electroencephalographic abnormality, and the specific clinical condition. The heavy black curve is the "age-abnormality" curve for the total psychotic population and should be compared with the "age-abnormality" curves for the separate psychoses. Some of the points in these curves are based on small numbers of cases and some on large numbers. The relative reliability of the points is indicated by various symbols. The "age-abnormality" curve for the total psychotic population is resolved into its components, the "age-abnormality" curves for the specific psychoses. Each of these component curves has a different location and shape. When large numbers of cases have been collected these component curves may require revision but it is likely that a

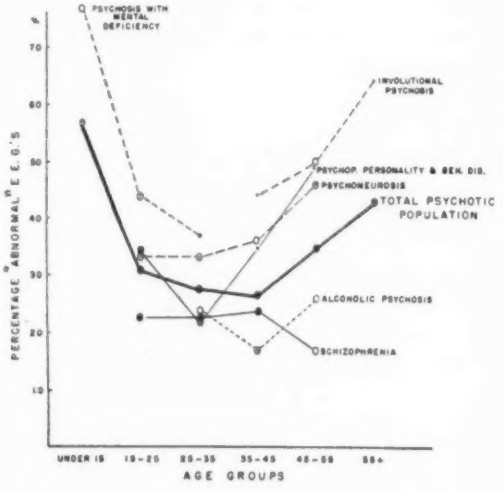

Fig. 4.—Percentage abnormal EEGs as a function of age in certain neuropsychiatric conditions as compared to the total psychotic population. The number of cases represented by each point on the graph depends on the symbol used, as follows:

- ● (over 100 cases).
- ⊙ (50 to 100 cases).
- ○ (25 to 50 cases).
- · (less than 25 cases).

Heavy black curve is the "age-abnormality" function for the total psychotic population. Below this line is shown the curve for alcoholic psychosis and schizophrenia. Above this line are shown the curves for psychosis with mental deficiency, involutional psychosis and psychoneurosis. Intersecting this line in two places to form a *V* is the curve for psychopathic personality and behavior disorders. This graph shows that a particular psychosis may have a characteristic "age-abnormality" curve, and that the curve for the total psychotic population is in reality the summation of the characteristics of the several neuropsychoses.

given neuropsychiatric disorder will have a characteristic curve.

The question remains as to whether the percentage of electroencephalographic abnormality in a given psychosis is explained by the age range in which that psychosis predominates or whether the abnormality to be found at a given age is explained by the particular psychosis predominating at that age. There are two points of evidence which leads us to believe that the first of these alternatives is correct: (1) the fact that normal individuals show increased abnormality at the extremes of life, and (2) the fact that several conditions—namely, involutional psychosis, psychoneurosis, psychopathic personality and behavior disorders, and alcoholic psychosis—show a slope upward as regards incidence of abnormality beyond 35 to 45 years. (Schizophrenia, however, does not.) (*See* Fig. 4.)

Opposed to such an explanation is the fact that at a given age (say, 45 to 55 years) widely differing values are found for the individual psychoses (from 17 per cent in schizophrenia to 50 per cent in involutional psychosis), and the fact that a more precise cortical abnormality, such as *fast* activity, may have a higher incidence in one type of psychosis than in another even at the same age range. In all probability, therefore, both age and the type of clinical disorder are important variables that should be taken into account when analyzing electroencephalographic data.

Concept of Normality-Abnormality

We have defined electroencephalographic "normality" and "abnormality" and have been able to show changes in incidence of "abnormal" records with age and with diagnosis and a varying incidence of more precise types of electroencephalographic abnormality, such as slow and fast activity, both with age and with diagnosis. It would seem that since the incidence of various brain wave rhythms varies in this manner it is necessary to alter our concept of what is normal and abnormal. Frequencies outside the arbitrary limits are not unusual in the psychoses in youth or old age. Slow cortical activity is common in the early years, fast activity is common in middle life. Fast activity is not unusual in involutional psychosis, whereas slow activity appears frequently in psychosis associated with mental deficiency, in psychopathic personality, and senile and arteriosclerotic psychosis. A statement of the significance of the electroencephalographic findings in any case should take cognizance of these correlations with the clinical diagnosis and with age.

Summary

The EGGs of 1,593 neuropsychiatric cases are analyzed and the tracings are classified as "normal" or "abnormal." "Abnormality" is defined as activity with a predominant frequency outside the range of 8 to 12 per second or a tendency to change greatly with overbreathing. This criterion is applied to all records regardless of age or clinical condition. "Abnormal" records are further classified as slow, fast, and mixed slow and fast.

The percentage of "abnormal" records found in the various neuropsychiatric conditions varies from 22 per cent in alcoholic psychosis to 54 per cent in senile and arteriosclerotic disorders. The order is as follows: alcoholic psychosis, 22 per cent; schizophrenia, 23 per cent; psychopathic personality and behavior disorders, 31 per cent; manic-depressive depressed, 31 per cent; psychoneurosis, 34 per cent; manic-depressive manic, 42 per cent; psychosis with mental deficiency, 50 per cent; involutional psychosis, 51 per cent; senile and arteriosclerotic psychosis, 54 per cent. A control group primarily between 20 to 30 years of age has 10 per cent abnormal EEGs.

Involutional psychosis and manic-depressive depressed conditions are conspicuous because of a large amount of fast activity, whereas senile and arteriosclerotic psychosis, psychosis with mental deficiency, and psychopathic personality and behavior disorder are associated with a large amount of slow activity.

The very wide range over which the various neuropsychiatric conditions are distributed makes it necessary to study the incidence of electroencephalographic abnormality as a function of age. When this is done, the relationship between percentage abnormality and age is found to be a hyper-

bolic curve with greatest abnormality in youth and old age, and least abnormality between 25 and 45 years. The changes of incidence of electroencephalographic abnormality with age are so great that the factor of age cannot be neglected in the evaluation of the EEG. Furthermore, marked variations of more specific types of electroencephalographic abnormality with age are also found. For example, the incidence of slow activity falls rapidly with increasing age, from 20 per cent under 15 years to 5 per cent at age 45 to 55; and beyond this the incidence of slow activity rises. On the other hand, a rapidly rising incidence of abnormal fast activity occurs with increasing age, from 4 per cent under 15 years to 20 per cent at age 45 to 55, with a probable decline beyond 55 years.

The electroencephalographic findings in the various neuropsychiatric conditions are largely explained by changes associated with age. This makes it necessary to readjust our previous ideas of normality and abnormality in the classification of EEGs so as to take into full consideration the major changes and trends associated with age. In this regard, the present review of a large and diversified group of cases covering a wide age range will provide preliminary standards of comparison and may be useful as a guide to further study along the same lines.

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THE NATURE OF PSYCHOGENIC CURE[1]

C. P. OBERNDORF

The distinction of being a president of the New York Neurological Society has long carried with it the privilege of addressing its members at the first meeting of the year. It has also been a custom for the president to choose as subject for his address some topic or interest with which he has been particularly identified. I am thus following a well established precedent when I speak on that subject which has engaged my energies for the past 30 years—cures through psychic influence.

Man is as vulnerable as any other creature to the destructive forces of violence and disease. But man alone as centuries passed has improved upon the methods of meeting such threats. New, fast, certain means of overcoming threats to limb and life continue to be discovered and within the past 5 years the world has been blessed with a new marvel —the sulpha drugs referred to as "God Powder" in a magazine article describing the work of the Army Medical Corps in Guadalcanal.

This scientific type of protection of man by man has superseded other procedures by which he originally attempted and hoped to ward off impending dangers—methods today recognized as suggestion. By suggestion I mean the presentation of an idea indirectly to the mind and this is most often effected through some mediated association. Such influence through association may be exerted in many forms—such as an individual, locus, ceremony, atmosphere, institution or method. Primitive psychogenic suggestive cures are to be distinguished from modern psychotherapy which begins with the examination of disease symptom-complexes and the reality situations in which they originate and live. Modern psychotherapeutic procedures —such as persuasion and psychoanalysis in their various derivatives and modifications—introduce the important elements of re-alignment of conflicting ideas, re-appraisal of cherished concepts, re-education, appeals to intellect and intelligence. However, the two latter qualities are often lacking in many of our fellow-beings.

In the earliest times, and still among primitive folk, the appeal for aid in the face of peril regularly went to a power regarded as superior to man. Such power was not restricted to the gods and priests but also at later times was vested in royalty, potentates and exceptionally endowed persons. Supplications to such persons took the place of the direct methods which science now employs. But even today zealous believers in the power of prayer do not hesitate to attribute the disappearance of conditions considered functional—such as persistent pains, nervousness, etc.—and even maladies definitely regarded as organic to supplications made to some particular spiritual force.

Only in comparatively recent times has man dared to examine the nature of psychogenic cures whether divine or secular. The history of this progress from Anton Mesmer to psychoanalysis has been recorded often and well.[2]

Notwithstanding the growth of science, reliance on the power of prayer and magic, even on superstition, has stayed with mankind from its earliest days. Often now the scientifically trained man does not always reject the aid of prayer in his endeavors to cure his patients. Sometimes those who profess atheism and regard religion as a code of ethics, in troublous times resort to prayer or envy those who find it possible to rely on faith. This tendency becomes accentuated in times of crisis—such as war. Here in combat, death and disease are determined by chance to a greater extent than in time of peace. The incidence of death appears more plausibly determined by some supernatural force than in times of peace and this im-

[1] Presidential Address (abbreviated) read before the joint meeting of the New York Neurological Society and the Section on Neurology and Psychiatry of the New York Academy of Medicine, November 9, 1943.

[2] Podmore, Frank. Mesmerism and Christian Science. Jacobs and Company, Philadelphia, 1909.

pression of fatalism, supernaturalism brings out latent faith in magical counter-measures.

The question may be raised why an all-powerful, superior Being should require the aid of man's skill, even perhaps why disease should exist—why death, if come it must, should not be arranged to occur opportunely and painlessly. The position usually assumed in answer to queries of this type concerning the limit of a God's power to heal is well stated in "Religion and Medicine" [3] written jointly in 1909 by Doctors Worcester and McComb, ministers connected with the Emmanuel Church of Boston, and Dr. I. Coriat who later became an outstanding psychoanalyst. In the introduction they say, "we believe that God has the power to cure all disease but we do not think that God cures all disease by the same means. At all events an authentic instance of recovery from organic disease through psychic means is what we are waiting for."

We, who as psychiatrists, seek to understand the operation of mental phenomena, should be the last to scoff at miraculous cures. Rather we should try to determine what psychological elements may have entered into the conditions cured and may have operated in curing them in the hope that such studies may lead to the directed and controlled utilization of these factors. Such studies should include cures attributed to superstition or magic, to cures dependent upon religious faith occurring as isolated and independent individual experiences or in groups where identification with the mass strengthens the intensity of suggestion. They should embrace also systems, such as Christian Science, with a formula derived from a supreme power, which denies the reality even of organic changes.

The need for critical examination holds equally for medically approved methods—such as hypnosis and suggestion, persuasion or psychoanalysis, the latter more than any other psychological procedure insisting upon a recognition of reality principles. The extensive and penetrating studies of this last method, particularly in symbolism, identification and unconscious mentation, have shed much light on the operation of all forms of psychogenic cures including the most primitive tribal rites.

The differentiation of organic and psychogenic disease is so complicated that the most skillful physicians must admit that they have at times been mistaken in both directions. Just when in man's evolution symptoms simulating organic disease began to appear I cannot say. That the word hysteria, from the ancient Greek, covered manifestations still included in the current scope of the term, and was attributed to unsatisfied sexual longing in the woman, is common knowledge. In some animals, as the opossum, an instinctive simulation of death operates as a defense in the face of threat.

Two main factors are involved in all forms of psychogenic cures—first the source, whether it be a person or an institution, which asserts that the agent is beneficial, be it word, deed or ritual; and second, the timing of such suggestions. Every psychotherapeutic procedure, be it sorcery or so meticulously executed and scientifically based a procedure as psychoanalysis, is offered with the hope, if not the direct assurance, that it will relieve the illness for which it is applied. As a broad assertion we may say that the important factors are not so much what is said or done in the wide phenomenon of the psychogenic cures as whose authority backs them and when they are given. Without disparagement of the tremendous scientific achievements which psychoanalysis has made in this field, the very postulate that conflicts are due to unconscious factors and that if these are carefully unravelled a cure will result, in itself constitutes a powerful and continuous suggestive force. It keeps alive in the patient the hope, even the belief, that the long process will eventually result in a cure.

The scientific interest in psychogenic cures has been preponderantly directed to the qualities of the agent instituting them—whether it be a god, a God-head or a human being, physician or layman—rather than upon their timing. The quality attributed to such agents is usually power, either force or persuasion, the thunder of a Zeus or the protection of a Hera. A prototype of the gentler form of psychogenic, almost magic, cure is summed up simply in the phrase and

[3] Worcester, Elwood, McComb, Samuel, and Coriat, Isador H. Religion and medicine, p. 4. Moffat, Yard and Company, 1908.

ceremony with which mothers so often assuage the minor hurts of their children—"Mother will kiss it and make it well." There is much in this that speaks for a postulate of psychoanalysis—namely, that the belief in the efficacy of all magic is based unconsciously upon a denial by the person of reality object relationships and especially of a nullification of the original separation of a child from its mother.

Emotional interplay, such as the mother with her child, was early recognized as a factor in hypnotic cures. The trance-like states into which mesmerized (hypnotized) patients lapsed were known to depend upon an emotional interaction between the hypnotizer and the hypnotized person. Also it was recognized that erotic elements were operative in the phenomenon and that the situations in hypnosis rendered the subject more ready to receive suggestions given him. This characteristic of hypnotic phenomena has since been illuminated and at least partially explained by the psychoanalytic school under the concept of transference—positive, negative and counter. The term "transference cure" has been used in psychoanalytic literature to denote the disappearance of symptoms because of an emotional readjustment of the patient, induced by a receptive or reproving attitude on the part of the physician but without a satisfactory working through of unconscious factors involved in the symptom formation.

Another valuable contribution of psychoanalysis has been its investigation of the varying values of the same or similar communications from persons of different types —such as the good father, the bad mother, the jealous sibling. An especially important point is the appreciation on the part of the modern therapist that he occupies such rôles in the sick person's mind.

Belief in any idea suggested or advanced often depends upon the person telling it and this is not necessarily related to the wisdom, knowledge or veracity of that person. For example, one of my patients, at the time a devout Catholic, related that at the age of 12 he could not accept the information offered him by the boys in the lot where he played that conception could not occur without sexual relation. He knew that his adored and devout mother could not have been a participant in an act so sordid.

One blustery November day he ran into the lot where a group of playmates were roasting potatoes over a fire. The leader of the little group, a boy of 14, saw him approach and looked up from the potato on a stick and in a tone which indicated that the question referred to their previous discussions, said—"Well, Mac, do you believe it yet"? When my patient replied firmly in the negative, the older boy turned to little Benny Bernstein, aged 8, for his opinion on the subject. The latter, with fine disdain that his knowledge on this elementary subject should even be questioned, replied authoritatively in a monosyllabic word of four letters. My patient turned on his heel, left the lot, went to his room and sobbed for hours. He was convinced because, as he said, "if any one as dumb and young as little Benny Bernstein knew it, it must be so."

This episode clarified for me a circumstance which had mystified me at the clinic which I headed at that time. One of the physicians, considered by most of us as very dull and even at times silly, had good therapeutic success with certain patients. This seemed to explain the puzzle on the basis of a crude identification. The patients may have thought in some way that if a person like Dr. X—that is, someone more like himself—knew it, then it must be so. Now I would not have you interpret this as a plea for duller psychiatrists but it does illustrate that a facility for identification on a common ground often smoothes the therapeutic approach, especially with ignorant people. This latter principle of identification for effective psychotherapy may well be extended to a certain degree to many other situations in racial, denominational, educational and cultural categories where empathy of the patient with the physician can readily take place.

Of course a great number of diseases diagnosed as either organic or functional are self-limited. Any procedure instituted at the time that a malady is on the wane, be it by medical man, ecclesiastic or layman, will be credited with the happy result. This circumstance accounts for the innumerable remedies for usually self-limited common

colds. Each is declared invaluable by the housewife recommending it, or the drug firm advertising it. Each works well if taken at the propitious moment. Similarly many a physician called in consultation just before the crisis in a disease may be credited with superlative ability when the condition is about to resolve itself.

On the other hand misfortune in timing may account for the therapeutic failures of countless procedures—medical as well as magical. My own faith in magic received a lasting blow as a child of 9 when I lived in the South. A sty had appeared on the lid of my eye and the negro mammy, in whom I had great faith and upon whom I relied for counsel and solace when in difficulty, told me that it would disappear if I stood at the exact center of the crossing of two roads, all alone, at nine o'clock at night and repeated—"sty, sty, leave my eye, catch the next one passing by." It required the sum total of my youthful courage to follow her directions in the darkness which frightened me. But I did so and repeated the magical words, reverently and conscientiously. On the way home I passed a little colored boy—and kept my sty for several days until it burst spontaneously. "The old black magic," as they say today, failed ignominiously because the timing had been faulty.

As already pointed out, while the psychoanalytic school has stressed the source of the suggestion, it has said relatively little about the fact that the same suggestion from the same person may at one time be successful and at others fail dismally. To be sure the importance of the timing of interpretation during psychoanalytic procedure is well recognized but in psychoanalytic practice choice in the timing of interpretation varies with experienced analysts. So diverse were the replies on this topic in a questionnaire on problems of technique examined by Edward Glover [4] that he concludes "the whole process of timing is much more intuitive than is generally conceded." If by intuition is meant an art which results from the intelligent use of experience, it seems likely that the therapeutic skill of the analyst rests as much in his choice of the timing of interpretations as in their content.

Most persons come for psychotherapy not only for a specific situation but at a significant time. Usually the reason assigned for the first visit is some crisis associated with an external situation. However, the underlying conflicts and symptoms which have resulted from them have nearly always been of long duration and one often learns later of previous similar violent crises. Other means of therapy may have been employed without satisfactory results before the patient finally decided he must seek a psychotherapy which involves confession. The following is an illustration:

Not long ago a man called on the telephone giving his name and supposing correctly that I would not remember it. He further volunteered the information that I had seen him as a youth, 20 years previously, in the out-patient department of Mount Sinai Hospital. During his visit to me it developed that the patient, now 37 years old, had been married some 15 years and had been moderately successful as a small merchant. Notwithstanding the marriage his essential difficulties had remained unchanged since he visited the clinic in 1923. He had concealed his true problems at that time but now revealed that they were then as now of a homosexual nature. The confession afforded him an enormous relief, as he wrote a week later.

No question exists in my mind that I had been chosen for the long deferred confession because I represented a father surrogate. But why had so many years been permitted to elapse since his initial visit to the clinic—especially as there had been no particular precipitating external cause at just this time?

As the patient's history unfolded itself it became evident that during these 20 years a sexual maturation had occurred in him very slowly and he had relinquished immature attachments and attitudes. His experiences had reached the point where a subjective awareness of the tension between his homosexual and heterosexual components became intolerable and where the urge for heterosexuality was gaining the ascendency. In other words, he was beginning to get well and was quite ready to establish rapport

[4] Glover, Edward. Technique of psychoanalysis, p. 23. Institute of Psychoanalysis, 1940.

(positive transference) for the acceptance of (belief in) the reassurance which this new visit afforded him. Effectually at this time he was ready to accept change, to feel, as he said in a letter, "like a different man," although I had given him no explanatory or reassuring comments.

It is well known that if the process through which the patient unconsciously eases his difficulties comes from himself—that is, if it be intrapsychic, or if we will, is auto-suggestive, the effect is apt to be more acceptable to him as well as more permanent. This is because the phenomenon of transference—allosuggestion—whether it be hetero- or homo-suggestion—does not come into his consciousness, and arouse his resentment as so often occurs when the suggestion or assertion comes explicitly from the analyst. When that which the "I" says to the "self" is accepted, it is apt to be lasting because the timing must be right for this to happen. In addition one may say that intra-psychic conciliation is more acceptable to both the "I" and the "self" than direction from without. To a certain extent in the extreme forms of passive technique, when the analyst may allow hours of verbal productions to pass with almost no comment, he is in effect giving the patient the reins and putting some of the responsibility for his progress temporarily upon him.

It would be an interesting study to determine whether a greater percentage of cures is effected among those who spontaneously seek the supernatural aid of a shrine or among those who are brought there by trusting friends. It is my impression that in psychoanalytic practice where the patient is brought to treatment by the family, the results are far less likely to be favorable than when he comes spontaneously—that is, at a time when he himself is ready for the change.

This situation is analogous to that in other body functions where the timing of their execution should be determined by physiological need. It is related that many of the Southwestern Indian pueblos celebrate the coming of the summer tourists with a feast during which they caricature the white man. One jest which is perennially successful is for an Indian to look at a watch and remark —"I must see whether it is time to be hungry."

Cases of neuroses of almost life-long duration with little deterioration of any mental function are well known in psychiatry.[5] Cases which have been under psychoanalytic treatment for years which show only slight improvement are also familiar. On the other hand many psychoanalysts have seen major symptoms for which the patient came for treatment quickly disappear before the mechanisms theoretically responsible for them have been broached.

These are facts which cannot be ignored in the consideration of psychogenic cure. In those cases where long continued analyses reach a stage of stasis, we call the failure to improve "resistance" and the analyst proceeds for weeks and months to attempt to alter such unconscious opposition. Occasionally it is his fortune after many months of work to tell the patient something which he has often said previously and which the patient now accepts because by this time the latter's mental state has reached a point where the even balance of conflicting forces has been disturbed.

Thus some analysts, among them myself, have employed the method of fragmentation of analyses. This consists in the intentional interruption of the analysis after a period of time, even at the risk that the interruption may be turned into discontinuation by the patient. During the free interval the mental conflicts of the patient assume a more definite form and at a later date are more favorable for analytic progress.

Perhaps one may say that psychoanalysis operates in the sequential breaking of tensions and in the timing of explanations at moments fitting for receptivity. In this sense the psychoanalysis becomes an intentional procession, a planned series of psychic situations, each of which in turn becomes favorable for suggestion intended to alter fixed psychic tension.

The word suggestion, as I have used it, signifies nothing of a supernatural nature with which the word was once associated or automatic obedience such as is shown by a

[5] Oberndorf, C. P., and Eisendorfer, Arnold. Anxiety in a neurosis of seventy years' standing. Psychiat. Quart., 16: 221, April 1942.

person in hypnotic states. Suggestion as here used is in agreement with Ferenczi—namely, that "it consists of influence on a person through and by means of the transference-manifestations of which he is capable." The tensions to which I have just referred may have manifested themselves either in physical symptoms or mental disturbances. Thus through a scientifically based art a series of susceptible mental states is produced, each one separately comparable to that which might develop spontaneously in patients who respond to mystic powers such as operate at Lourdes or in auto-suggestion.

All forms of psychogenic cure, I have indicated, are largely a matter of acceptable sources of suggestion and their auspicious timing. The inclusion of psychoanalysis does not detract from the esteem of Freud's genius or the credit due the psychoanalytic school of investigators. Indeed psychoanalytic thinking has enriched immeasurably our grasp on the elusive elements in all psychic healing—especially in the understanding of transference (faith and rejection) with all its unconscious re-inforcements and of the temporal stages of psychological development, each powerfully affected by instinctual, sexually-tinged drives. It has enabled us to reintegrate intrapsychic disharmonies, to strengthen disorganized egos. It also has brought within the range of a scientifically planned psychotherapy many conditions of psychogenic origin which previously had never been accessible to any therapy.

Let us hope that the future will bring to the aid of the physician today using such purely psychological methods to achieve proper timing and effective interpretation, physical agents—possibly of a biological or chemical nature—which will hasten the necessary change in tensions. While we have established the psychological mechanisms producing symptoms, we are still very much in the dark as to what type of physical structure affects the speed and quality of thought flow and fosters the formation of tensions of conflict, and how if possible this nature can be changed.

THE BASAL METABOLIC RATE, FASTING BLOOD SUGAR, GLUCOSE TOLERANCE, AND SIZE OF THE SELLA TURCICA IN HOMOSEXUALS

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We have not been able to find a report of routine clinical endocrinologic studies on homosexuals in the literature. Henry(1) took X-ray films of the sella turcica of many of his cases but reports them merely as small, medium or large without comparing them to a normal group. The level of androgenic and estrogenic substances in the urine of homosexuals has been studied by Glass, Deuel and Wright(2) and by Neustadt and Myerson(3, 4). Both of these groups of investigators reported that homosexuals have relatively high levels of estrogens and low androgens in their urine but it appears that the work of neither group is conclusive(5). In the report of Glass, Deuel and Wright the differences in estrogen and androgen within the homosexual and control groups are far greater than the differences between the groups as is indicated in the following data summarized from their paper:

	Androgens (I.U.)		Estrogens (Gamma)	
	Average	Range	Average	Range
Homosexuals (17)	29.9	12.0—55.5	6.34	1.5—35.0
Normals (31)	34.1	16.4—55.9	4.41	1.5—15.0

Neustadt and Myerson employed a colorimetric method for the determination of estrogens. This method has been found unsuitable for use except in the determination of the relatively large amounts of estrogenic substance found in pregnancy urine(6).

The problem of the status of the endocrines in homosexuals has been approached indirectly by studies of body build(1, 7, 8, 9). There is considerable disagreement about the significance of the findings along these lines but it appears conservative to state that no recent investigator has found evidence of a specific endocrine disorder in homosexuals from studies of this type. For example, Henry(1) has reported certain differences in the averages of some measurements of 40 male homosexuals as compared to a supposedly normal population but these differences do not appear to form an "endocrine syndrome" in the majority of his patients studied individually.

In this paper we report the results of routine clinical endocrine studies performed on a group of male homosexuals.

Method

Basal metabolic rate determinations, fasting blood sugar, glucose tolerance tests and measurements of X-ray pictures of the sella turcica were recorded on a group of young adult male homosexuals, inmates of the Medical Center for Federal Prisoners at Springfield, Missouri. The ages of the patients ranged from 16 to 44 and the average age was 26.8 years. Thirty of the patients were in prison for performing homosexual acts while members of the armed forces and the other 12 were convicted of violation of the Selective Service Act, transporting women in interstate commerce, auto theft, or impersonating a federal officer. In order to make the group as uniform as possible only patients who played the female rôle in the homosexual relationship were selected for this study. The majority of the cases were effeminate in manner and interests, had experienced strong emotional attachments to men, and had repeatedly indulged in overt

[1] From the Medical Center for Federal Prisoners, Springfield, Missouri.

homosexual acts. The basal metabolic rate determinations were made on a Jones type of apparatus and were compared to a group of BMR determinations made during roughly the same time interval, on the same apparatus and on a group of non-homosexual individuals living under very similar conditions. The blood sugars were determined by the Folin-Wu technique. The anterior-posterior and dorso-ventral diameters of the pituitary fossae were measured on lateral X-ray films of the skulls and compared to those of a non-homosexual group and also with the measurements of the normal sella as given by Koehler(10).

Results

The basal metabolic rates were measured in 29 cases. The average BMR was found to be minus 6 and the BMRs ranged from plus 14 to minus 21. A non-homosexual control group of 19 individuals had BMRs ranging from plus 28 to minus 16 and averaging minus 1.

Fasting blood sugars were determined on 29 individuals. They were found to vary from 89 to 120 mgm. per 100 c.c. of whole blood and the average for the group was 103.3 mgm. per cent.

Glucose tolerance tests were done on 12 cases. The average for the group as a whole was well within normal limits as indicated in Fig. 1. The results of all tests are recorded in Table I where it can be seen that case 10 has a glucose tolerance somewhat below normal.

Lateral views of the skull suitable for measuring the anterior-posterior and dorso-ventral diameters of the pituitary fossae were obtained on 34 homosexuals and 26 non-homosexuals. These measurements and normal measurements as given by Koehler are recorded in Table II. It is obvious that the pituitary fossae of our homosexual patients do not differ significantly in size from those of sexually normal people.

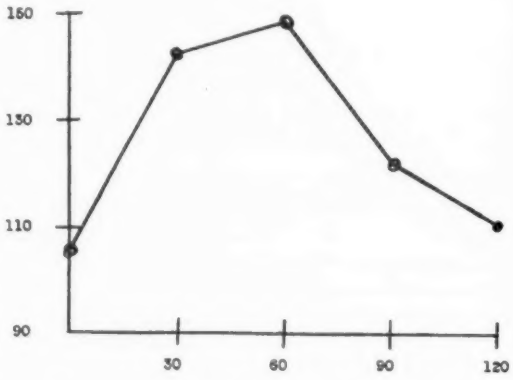

Fig. 1.—Average of glucose tolerance tests on 10 homosexuals.

Summary and Conclusions

Basal metabolic rate determinations, fasting blood sugar determinations, glucose tolerance tests, and measurements of X-ray films of the pituitary fossae were made on a group of male homosexuals. No significant deviations from the normal were found.

TABLE I

Glucose Tolerance Tests on 12 Homosexuals

Case	Fasting, mgm. per cent	30 min., mgm. per cent	60 min., mgm. per cent	90 min., mgm. per cent	120 min., mgm. per cent
1	110	140	130	110	90
2	100	170	120	118	
3	104	116	104	93	103
4	110	160	85	65	105
5	111	155	196	135	
6	95	125	136	145	140
7	100	150	120	89	65
8	100	110	160	135	147
9	99	134	126	96	89
10	111	160	230	235	130
11	107	155	195	150	130
12	110	135	175	110	108
Average	105	142	148	123	111

TABLE II

ANTERIOR-POSTERIOR AND DORSO-VENTRAL DIAMETERS OF THE SELLA TURCICA OF HOMOSEXUAL AND NON-HOMOSEXUAL INDIVIDUALS

	Homosexual (34) Author's series	Not homosexual (26) Author's series	Normal Koehler's series *
Anterior-posterior:			
Average	10.7 M.M.	11.7 M.M.	10.6 M.M.
Range	7.0—14.0 M.M.	7.0—15.0 M.M.	8.0—16.0 M.M.
Dorso-ventral:			
Average	8.1 M.M.	8.7 M.M.	8.1 M.M.
Range	4.5—13.0 M.M.	6.5—10.0 M.M.	4.0—12.0 M.M.

* Koehler, A.(2).

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A QUANTITATIVE USE OF THE RORSCHACH METHOD

"Instability" and "Disability" Ratings Which Show Clinical and Psychometric Correlations

W. D. ROSS, Major, R.C.A.M.C.

A few years ago this Journal reported some results of the Rorschach method when used to obtain objective scores which could be treated statistically and compared between normal and abnormal individuals(1). Far too little effort has been applied to the study of correlations between such objectively derived scores and various clinical groups as well as other mental tests. Many psychologists and psychiatrists who might find uses for the Rorschach method, both clinically and in research, are not attracted to its use in a qualitative and interpretive way, requiring, as such use does, considerable special experience. The use of the method in a simplified and quantitative way need not jeopardize the qualitative use and it offers considerable possibilities. The purpose of the present paper is to draw attention to such a manner of using the Rorschach method.

On the basis of a comparison between the Rorschach records of patients with the diagnosis of psychoneurosis, patients with brain disease or damage, and of control individuals, scores have been derived which can be combined to obtain two ratings of any record. These ratings have been labelled "instability" and "disability." They are a development from certain features which had previously been described by Rorschach(2), Oberholtzer(3), Piotrowski(4), and Miale and Harrower-Erickson(5) as being of value in differential diagnosis. Their use requires only a knowledge of the administration of the technique according to the system of the Rorschach Institute(6), and the following of a scoring key which has been presented elsewhere(7). The scores in the key are based on definitions presented with the key(7), or available as descriptions of the standardized scoring of the Rorschach Institute(6). Signs which involve interpretive judgment, such as "color shock" and "shading shock," have been omitted, and special experience with the method other than that necessary to develop proficiency in administration and scoring is not necessary in order to obtain these scores and ratings.

The ratings are obtained by a combination of the scores according to their occurrence in "neurotic" or "organic" subjects. The "instability" rating is obtained by adding signs which tend to differentiate psychoneurotic patients from normals and from patients with brain disease, to signs which are common to psychoneurotic patients and ones with brain disease, and subtracting signs which tend to differentiate patients with brain disease from psychoneurotics and normals. The "disability" rating is obtained by adding signs which tend to differentiate patients with brain disease from psychoneurotics and normals, to signs which are common to patients with brain disease and psychoneurotics, and subtracting the signs which tend to differentiate psychoneurotics from patients with brain disease and the signs which tend to differentiate both normals and psychoneurotics together from patients with brain disease. The ratings were given non-clinical labels because it was considered that, although they show clinical correlations, they should not be identified with clinical entities, but rather viewed as measures which might be of use if weighed along with other clinical information.

Table I presents the means and standard errors for the ratings in the original groups from which they were derived. These groups included 50 psychoneurotic patients, 24 patients with brain disease, 50 healthy individuals of superior intelligence, and 50 recruits of low average intelligence. The selection of these groups has already been described(7). The difference between the two control groups suggested that intelligence might be a factor in these ratings, especially in the one labelled as "instability." For this reason the correlations between these ratings and two common psychometric procedures, the Binet word list and the span

of digits, were studied in a group of 52 individuals on whom these tests had been done along with the Rorschach method in the course of an investigation which is being reported elsewhere(8). These correlations are presented in Table II.

The ratings show definite negative correlations with these psychometric items. In general, the higher the psychometric scores the lower the "instability" and "disability" ratings. The correlations of "disability" with stability" is being used for the want of a better one.

The significance of the "instability" rating is suggested by its ability to differentiate two groups in relation to the evidence to be found in their histories of unstable personality background, although these groups are not differentiated by psychometric scores. This is demonstrated by Table III which is based on 42 individuals who were the subject of an investigation being reported else-

TABLE I

RATINGS IN ORIGINAL GROUPS STUDIED

	No. of cases	Instability Mean	Instability S.E.	Disability Mean	Disability S.E.
Psychoneurotic patients	50	17.9	± 1.53	8.3	± 1.3
Brain disease and injury	24	8.75	± 2.42	25.1	± 2.69
Superior healthy individuals	50	3.6	± .66	1.1	± .75
R.C.A.M.C. recruits	50	14.1	± 1.20	7.6	± 1.06

TABLE II

CORRELATIONS WITH PSYCHOMETRIC TESTS

	No.	Instability	Disability
Binet vocabulary	52	− .51 ± .069	− .20 ± .092
Span of digits	52	− .39 ± .082	− .46 ± .074

TABLE III

RELATIONSHIPS TO UNSTABLE PERSONALITY BACKGROUND

	No. of cases	Binet vocabulary Mean	Binet vocabulary S.E.	Span of digits Mean	Span of digits S.E.	Instability Mean	Instability S.E.	Disability Mean	Disability S.E.
Without unstable background	20	23.75	± 1.19	8.0	± .36	9.0	± 1.39	5.0	± 1.21
With unstable background	22	22.25	± 1.13	7.6	± .27	17.7	± 1.78	7.4	± 1.77
Differences		+1.5	± 1.64	+ .4	± .45	− 8.7	± 2.26	− 2.4	± 2.14
Fisher's "t"		.91		.89		3.85		1.12	
Probability		.30 − .40		.30 − .40		< .01		.20 − .30	
Significance		None		None		High		None	

span of digits is not surprising in view of the impaired performance on this test with brain disease or damage. The correlation of "instability" with the Binet word list requires further comment. Possibly "instability" is not the best label for something which is present in psychoneurotic patients and is also negatively correlated with a verbal intelligence score, for there is no doubt that individuals may be "unstable" or neurotic and yet of high intelligence. However, other things being equal, intelligence can contribute to stability in actual life as well as in the Rorschach performance, so the label "in-

where(8). It will be noted that the groups show significantly different "instability" ratings although they do not differ significantly in "disability," Binet word list, or span of digits. The groups had been divided according to the presence or absence in their histories of three or more among several so-called "neuropathic traits" listed in detail in the other report(8). These traits included such items as a family history of nervous or mental disease, tics, enuresis or stammering in childhood, etc., and they involved a mixture of early symptoms of instability as well as factors predisposing to instability. They

are items which have been used in prognosis in psychoneuroses(9), and the correlation of the "instability" rating with them suggests that it may have a similar usefulness.

The applications of these ratings which are being tried out at present include neuropsychiatric and psychosomatic research, and diagnosis and prognosis, including prediction of response to psychotherapy. The use of the ratings in research is illustrated in Tables IV and V. Table IV presents the results of a study of the ratings in patients after head injury which is being described in detail elsewhere(8). Table V presents the ratings obtained so far in various clinical groups of psychosomatic interest. It is intended that the investigative use of Rorschach scores should not be limited to the discovery of mean levels of these ratings in various clinical groups, but that attempts should be made to sort out, among signs similar to the ones from which these ratings were obtained, features which may be more or less characteristic of various neuropsychiatric and psychosomatic conditions. For example, in the cases studied so far, a high form percentage appears characteristic of colitis, while migraine patients tend towards an over-emphasis on whole answers, with delay on Cards VI and IX, the cards on which psychoneurotic patients tend to have failures. Effort syndrome patients fail more commonly on Card VII. It is hoped that, by following these lines, a considerable contribution from the Rorschach method to objective and experimental aspects of psychiatry may be possible.

The diagnostic usefulness of these ratings and of other signs which may subsequently be developed must, of course, be dependent upon the use of such ratings and signs as contributors towards a clinical diagnosis, and not as a means of making a diagnosis by themselves, any more than should a blood Wassermann, an electroencephalogram or a blood cholesterol, be used by themselves. When the ratings are used in this way it should be remembered that they contribute to the likelihood of the presence of psychoneurosis or of brain disease but that they do not indicate with certainty its presence or absence. "Instability" ratings tend to be high in psychoneurotics but a high "instability" rating may be present in the absence of a clinical neurosis, and a definite psychoneurosis may be present with a low "instability" rating. Experience so far suggests that the greater the constitutional, predis-

TABLE IV

POST-TRAUMATIC CASES

	No. of cases	Instability Mean	Instability S.E.	Disability Mean	Disability S.E.
Within 3 weeks of head injury					
Slight or no evidence of brain damage	10	16.4	± 2.85	7.3	± 2.92
Marked evidence of brain damage	10	7.4	± 2.89	30.7	± 4.43
Over 1 month after head injury					
Without unstable background	43	12.1	± 1.24	9.2	± 1.61
With unstable background	44	18.4	± 1.61	8.0	± 1.34
With seizures	11	18.7	± 3.95	16.8	± 3.51

TABLE V

CASES OF PSYCHOSOMATIC INTEREST

	No. of cases	Instability Mean	Instability S.E.	Disability Mean	Disability S.E.
Migraine	50	9.8	± .97	5.6	± 1.47
Non-migraine headaches	25	10.3	± 2.10	8.4	± 1.72
Narcolepsy	14	14.4	± 3.40	4.7	± 2.04
Effort syndrome	20	15.9	± 3.16	7.6	± 1.59
Peptic ulcer	20	16.3	± 2.90	6.5	± 1.89
Colitis	6	16.5	± 4.70	5.8	± 2.08
Essential hypertension	10	12.1	± 2.70	4.1	± 1.79
Hyperthyroidism	6	11.5	± 3.95	10.3	± 3.42

posing factor, the greater the "instability" rating. In cases where the environmental or psychogenic, precipitating, factors are of greater importance, the "instability" rating is lower. "Disability" ratings tend to be high in the presence of brain disease or injury, or a marked degree of intoxication of the central nervous system, but they are low in localized central nervous system lesions. A few cases studied recently suggest that disability is also high in the presence of depression. This would be in keeping with the report of a similar type of scatter in an intelligence scale in patients with depression and those with brain disease(10), but the subject requires further study. Both ratings are high among subjects of low intelligence regardless of the clinical diagnosis, and they may be spuriously raised by poor cooperation from the subject in the test situation or by poor presentation of the test to the subject. All these factors require further investigation, but if they are borne in mind, the ratings can make a definite diagnostic contribution.

This contribution can be illustrated by two contrasting cases.[1]

(1) Pte. E. P., Canadian Army, 28 years of age, was admitted to hospital because of a sudden paralysis of both lower limbs following an acute gastro-intestinal upset just previous to returning to the west coast from furlough at home. There was complete anaesthesia of both lower limbs but the reflexes were not altered. The finger nails were badly bitten and palms of the hands very moist and there were features of instability in the childhood history. The paralysis was abolished with narcohypnosis, but for various reasons it was considered that this soldier's stability would not be sufficient for combatant duty. In this case the Rorschach "instability" rating was +34, and "disability" −7.

(2) Sgt. A. G., Canadian Army, 25 years of age, was admitted for investigation of "fainting spells" which had occurred about once a year for the last 3 or 4 years but had occurred twice recently within a few months. In some of these there had been involuntary micturition but there was no description of any muscular movements. There was a family history of some kind of "turns" in a paternal aunt and of one "fainting spell" in a brother. There were features of instability in the childhood history including breath-holding spells as a baby. There was a history preceding the recent attacks of some dissatisfaction about not getting a commission he thought he deserved for the load of work and responsibility he had been carrying. The diagnosis lay between hysterical syncope and epilepsy and the Rorschach "instability" rating of +18 and "disability" of +30 foreshadowed the later electroencephalographic evidence of a cerebral dysrhythmia.

The prognostic usefulness of the "instability" rating in psychoneuroses is suggested by its correlation with other items indicating a greater chronicity and a poorer response to psychotherapy, as illustrated by Table III. When the "instability" rating has been low, and physical disease has been ruled out or handled successfully, the response to psychotherapy has been much better than when the "instability" rating has been high. This can be illustrated by the ratings in a few cases of psychoneurotic post-traumatic headache followed in the neurological out-patient clinic of the Royal Victoria Hospital. These patients were given a rather superficial type of psychotherapy and the results might have been more successful in the more unstable patients had there been more time to spend with them, but they provide a useful comparison since all patients were approached along similar general lines by the same physician.

The "instability" ratings were as follows: In two patients who were already undergoing spontaneous improvement as a result of a change in their circumstances, +4 and +1; in three patients who responded immediately and lastingly to thorough examination, reassurance and explanation, +3, +5 and +1; two patients who showed some slow response to psychotherapy, but who later relapsed when adverse circumstances occurred and when the physician was not able to give them as much time as was needed, +15 and +17; two patients who were completely resistant to psychotherapy, +27 and +36.

The prognostic usefulness of the "disability" ratings can be indicated by its progressive diminution after severe brain injury as reported elsewhere(8). It provides a method of following a patient's progress after brain injury, or of judging the amount of responsibility which should be attached to the physical trauma(11). It may also serve as

[1]Appreciation is due to Dr. H. Angrove and Major A. Bailey for permission to quote these cases who were under their supervision at St. Anne's D. P. and N. H. Hospital.

a measure of the amount of mental impairment associated with cerebral lesions, and hence the advisability of surgical measures, such as the removal of cerebral scars in epileptics.

These ratings are presented now as a method of using the Rorschach technique which requires considerable further study. The results so far have been encouraging, but more must be learned about the various factors which alter the results. Data must be accumulated on the reliability of these ratings when used by different examiners, as well as on their occurrence in even more carefully selected clinical groups with simultaneous study by more detailed psychometric procedures than reported here.

For the present we can summarize the levels of the ratings as found so far in relation to some of the relevant factors. In individuals of superior intelligence without psychoneurosis, or with psychoneurosis with a good prognosis for psychotherapy, "instability" is around 3 to 4 and "disability" is around 1 to 2. In individuals of average intelligence without clinical psychoneurosis and without unstable background, "instability" is around 9 to 12 and "disability" around 5 to 9. In individuals of average intelligence with unstable background, and in the average chronic psychoneurotic who requires intensive therapy, "instability" is around 17 to 19 and "disability" around 7 to 9. In more markedly neurotic individuals, especially if they are of low intelligence too, "instability" may be as high as 35 to 40. In patients with a marked degree of brain disease or brain damage "instability" is around 7 to 9 and "disability" around 25 to 30, while in post-traumatic epileptics "instability" and "disability" are both around 16 to 18. The actual means and standard errors which provide the basis of these approximations can be found in the tables presented. In some conditions of psychosomatic interest, the levels of instability have appeared somewhat higher than that found in individuals of average intelligence without unstable background, but such studies will have to be controlled further with other psychometric tests.

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STARTLE NEUROSIS

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Psychiatrists working with Selective Service local boards and Army induction boards have a unique opportunity to study a wide variety of borderline neuro-psychiatric conditions rarely encountered in private or institutional practice, and including a wide variety of subtle personality deviations not yet adequately reported in the literature. Among the rarer psychiatric disorders is an interesting clinical syndrome characterized by hyperesthesias, excessive startle reactions and associated personality reactions. In typical cases the individual reports a long standing hypersensitivity to intense stimuli particularly when presented unexpectedly. When suddenly startled the person reacts intensely with an exaggerated startle pattern sometimes accompanied by a hoarse cry or other socially conspicuous behavior. These involuntary reactions may be so dramatic and humorous to others that the person may become the victim of never-ending practical joking on the part of his associates by suddenly slapping him on the back, "goosing" him, making loud noises or otherwise startling him. In exceptional cases undesirable personality reactions such as seclusiveness, aggressiveness, misanthropy or neurotic invalidism may result when the incessant teasing and resultant embarrassment become intolerable. When the individual has had no relief over long periods from chronic tension and emotional upsets attendant upon his humiliating disability he may eventually be reduced to a state of acute anxiety with emotional demoralization. It is the purpose of this paper to discuss excessive startle reactions and to report three cases recently studied.

THE NORMAL STARTLE PATTERN

During the last decade the normal startle pattern has been intensively investigated in psychological laboratories. Landis and Hunt (1,2,3,4,5,6,7,8) conducted a most comprehensive series of experimental investigations on the normal startle pattern and its physiological determinants. Utilizing rapid cinematography, the typical startle pattern was demonstrated to consist of blinking of the eyes, forward movements of the head, a characteristic distortion of facial expression, raising and drawing forward of the shoulders, abduction of the upper arms, bending of the elbows, pronation of the lower arms, clasping of the hands, forward movement of the trunk, contraction of the abdominal musculature, flexion of the hips and knees, and random foot movements. Not all of these elements may be present in any one reaction and the extent of their appearance is inconstant. Within one-half second after a pistol shot, the clear, unmistakable, immediate, stable, reflex pattern of response may be regularly obtained in monkeys, apes, infants, children and normal adults. Morgan and Olmstead(9) showed that the startle pattern also includes a momentary hypermetropia of the lens, dilation of the pupil, variable changes in skin resistance, increased heart rate, decreased foot volume and other sympathetic effects.

Bize(10) believes the startle pattern to be a constitutional reflex which can be brought under control in normal individuals through training. Emphasizing that normal development of cortical inhibitory control is essential for training, he reports the cases of two children with encephalopathies who were unable to bring about this inhibition.

Developmental studies on infants conducted by Clarke and others(11,12,13,14) indicate that the typical startle pattern first appears at about 16-20 weeks. Neonates react to startling stimuli with the Moro reflex which is a slow extension response confined to the first few months. The startle pattern is an immediate flexion response persisting throughout life. Crying, escape, orientation, and such overflow effects as urination and tumescence may occur in infants but are not universal. The startle pattern is usually quantitatively greater in children than in adults. Members of a pair of identical twins show slight variations in magnitude of the response, the twin showing

the greater startle reaction frequently being left-handed with mixed cerebral dominance. Startle patterns in monkeys and apes show many infantile characteristics such as plantar responses, increased activity and occasional absence of blinking.

Abnormal Startle Patterns

Landis(15) studied the startle pattern in a large group of patients with epilepsy, functional and organic mental diseases. Essentially normal startle patterns were found in manic-depressives, involutional melancholia, alcoholism and general senility. Many catatonic schizophrenics showed a gross exaggeration of the pattern, while one quarter of the epileptics showed no elements of the pattern. General paretics also frequently showed diminished startle reactions. Experimental studies showed that the startle pattern could not be entirely eliminated voluntarily but might be facilitated by voluntary "readiness to jump" or simultaneous light or shock stimuli.

An interesting observation on the constitutional nature of the excessive startle reaction was made by Humphrey and Warner (16) while studying many strains of German police dogs in an attempt to breed animals satisfactory for "seeing eye" work. They describe "gun-shy" and "stick-shy" dogs which were untrainable because of excessive sensitivity to loud sounds or physical contacts with sticks. These animals were quickly eliminated from the breed stocks as undesirable strains.

Clinical Studies

The three cases to be reported were encountered during routine neuropsychiatric examinations made on selectees at the U. S. Army Induction Station, Third Recruiting District, Rutland, Vermont, during the period from November 1940 to November 1943. Each of the cases was studied in consultation with at least one other psychiatrist in addition to the medical director of the station. It is estimated that the syndrome of excessive startle reaction occurs with a rough frequency of one in 2000 men examined.

Unfortunately it was not possible to obtain detailed case histories or personality studies because of the limited time available at the induction station. However, each man was questioned intensively and detailed notes were made on the spot. Frequently the nature of the selectee's disability became known to his comrades long before he reached the psychiatric examination room so that it was possible to observe the actual startle pattern and personality reaction under conditions closely approximating army life. Suffice it to state that the observed performances could not have been feigned and were genuinely disrupting both to individual and group morale.

Case 1.—White selectee, age 21, college senior. An unusually intelligent, physically attractive young man with no objective evidences of nervous or mental disorder. Denies family history of mental deficiency, epilepsy, nervous or mental disease.

Past history essentially normal except for extreme sensitivity to loud startling noises. Cannot remember when this started. Has never handled a gun in his life or gone hunting because "I couldn't stand the noise." Automobile backfiring startles him and "I nearly jump out of my skin." In his senior year in college was appointed to be manager of the basketball team but had to give up the position because he could not bear to shoot the blank cartridge pistol at the half and end of the games. Is able to stand noise better when warning is given but even then doesn't like it. No relative is similarly afflicted.

Psychiatric examination failed to elicit evidence of any other deviation from normality. The interview was conducted in a straightforward friendly manner with the selectee seemingly at ease and showing no evidences of tension or emotional instability. He seemed relatively well adjusted to his disability and had obtained work in a quiet atmosphere. During the middle of the interview, the nature of the disability was inadvertently demonstrated when a swinging door slammed loudly behind his head. He involuntarily jumped from his chair but quickly regained control of himself and laughed. At the end of the interview the examiner suddenly slapped the selectee on the back without warning and the same excessive reaction occurred. The selectee said he was well adjusted in civilian life but did not think he would do well in the army where he would have to shoot guns.

Case 2.—White selectee, age 36, high school graduate, married, Syrian. A tall, thin, dark, cadaverous looking individual who immediately gives the impression of being under great nervous tension. His eyes are slightly prominent and have an intense, burning look. He is ill at ease and very restless. There is an intermittent trembling of the right cheek as though he were chewing rapidly.

Psychiatric questioning immediately elicits the fact that he has had a nervous disorder for the last 10 or 15 years. On leaving high school he obtained a job at a mill but couldn't stand the noise so he started a little grocery store in an isolated end of town where he could be quiet. Loud noises make him "jittery" and he can't do anything until things quiet down. The fellows used to kid him by startling him in all sorts of ways and at last it got on his nerves. He frankly says that he could not stand the noise of army life. His nerves are all right as long as things are quiet.

When the selectee's back was turned the examiner gave him a sharp slap on the back. He jumped at least 3 inches off the floor, whirled about, uttered a sharp cry and began trembling violently. For the next few minutes he perspired profusely and gave all the objective evidences of an acute anxiety attack.

Physical examination revealed questionable diffuse thyroid enlargement. Fine tremor of outstretched hands. Coarse trembling of other parts of body when excited. Cranial nerves normal. Motor and sensory systems normal. Deep reflexes equal and very hyperactive.

CASE 3.—White selectee, age 33, grammar school graduate, married, employed at arsenal making munitions. This man almost disrupted the induction procedure. Shortly after getting undressed one of the other selectees suddenly bumped him from behind and he gave a piercing yell, associated with an excessive startle reaction. This performance was repeated at least 8 times before he arrived at the psychiatric examination room.

Denies family history of nervous or mental disease.

Spent 9 months at state industrial school at age 14 because "mother died and father couldn't take care of me." No subsequent arrests.

Physical health poor for last 8 years. Along with father and four brothers has had "pleurisy pains" over lungs and heart but has not lost much time from work. Frequently frontal headaches blamed on sinus trouble. For 6-7 years has had vague discomfort and abdominal cramps at appendectomy scar. Thinks he might have adhesions. After detailed consideration, these complaints were all admitted to be minor and had never been incapacitating. The examiner got the impression that beneath them lay a much more serious personality deviation which was quickly elicited in the history concerning social adjustment.

Has always had difficulty adjusting in social groups or at work because of an excessive startle reaction on being "goosed" or suddenly startled. He jumps so violently when startled that he has long been the butt of practical jokers. Has given up several mill jobs because the boys wouldn't let him alone. On his present arsenal job, he has had to request the foreman and lieutenant in charge to intercede with the other workers on his behalf and forbid them to "goose me." He has become very touchy and irritable, losing his head easily, and fighting with his tormenters on at least three occasions. Last month he stayed away from work for one week because he couldn't stand the boys picking on him. The men stay away from him now but still startle him by throwing fruit and other objects when he is not looking.

Psychiatric examination reveals a short sturdy young man with an intelligent appearance and manner. He has a sober, somewhat apprehensive expression and gives the impression of uneasily awaiting something. He did not smile at any time during the interview and at all times seemed on the defensive. As the interview progressed, he became openly surly and antagonistic. He openly resented questioning concerning his personal life and expressed paranoid feelings of persecution.

The examiner requested him to step next door where another psychiatrist was working and slapped him from behind as he entered the other room. The selectee uttered a loud piercing scream and jerked around with arms raised in pugilistic position and would have launched a blow had not the examiner stepped quickly out of range. Subsequent tests revealed that almost any sudden unexpected stimulus was effective in producing the excessive startle reaction.

Physical examination within normal limits.

DISCUSSION

It is not possible to do much more than describe this syndrome of excessive startle reactions from the limited data available. The syndrome is apparently a benign condition which progresses very slowly if at all and the severity of which is determined more by the nature of the associated personality reaction and social situation than by the basic fact of undue sensitivity to unexpected stimuli. The cases reported have been arranged roughly according to the severity of the personality reaction and the degree of incapacitation. It is suggested that the diagnosis "startle neurosis" be utilized when a neurotic personality reaction is associated with excessive startle patterns and results in maladjustment or incapacitation.

Case 1 was a well-adjusted, intelligent college student who apparently achieved some insight into his condition at a relatively early age and was subsequently able to make adjustments which minimized unnecessary exposure to the stimuli which disturbed him. His personality reaction was both effective and socially acceptable in the sense that he did not become socially conspicuous and was able to get along well in his own limited environment. The fact that the syndrome antedated Pearl Harbor lessens the possi-

bility that it represented a neurotic mechanism designed to remove the possibility of being inducted for military service.

Cases 2 and 3 presented more serious situations in the sense that the total personality had become involved and to some degree incapacitated by psychoneurotic reactions. Case 2 presents a complex diagnostic problem because of the possibility of associated hyperthyroidism or possible organic central nervous system disease, however the focal point of his disorder is the excessive startle reaction without which his other symptoms would have been relatively inconsequential as regards total adjustment to life. After having been experimentally startled several times at the induction station to demonstrate the syndrome to other medical examiners, this man was reduced to a state of nervousness and emotional upset resembling acute anxiety. Undoubtedly part of this reaction was caused by subjective feelings of humiliation, inferiority and embarrassment but the fact remains that the integration of his personality was seriously threatened and there is little doubt that he would have quickly broken down in military service.

Case 3 gave a long history of social maladjustment caused by the fact that his disability was quickly discovered wherever he went and he became the butt of every would-be practical joker in the neighborhood. Instead of laughing it off and seeking to discover compensatory adjustments this man reacted poorly to the joking and developed a bitter, antagonistic, almost paranoid attitude toward his tormentors. His attempts to fight back or to secure protection from his superiors only goaded his fellow workers into increased efforts to annoy him. Mob situations such as this are frequently productive of persecutory behavior comparable to pecking in chickens wherein anonymous members of a large group indulge in aggressive acts which would not occur in situations where more intimate personal contact with the victim existed. The psychosomatic complaints also presented by this selectee may have been neurotic symptoms serving the purpose of occasionally allowing him to escape into infirmity for a few days whenever the social situation became too intolerable. Probably this man would have gotten along much better in an occupation where he could work by himself in isolation from startling stimuli. Under existing circumstances however, he is rapidly developing a paranoid personality which might conceivably eventuate in psychosis.

The pathognomonic symptom of this syndrome appears to be the excessive startle reaction. This is the symptom which makes the individual conspicuous and the victim of tormentors. It is more difficult to determine the rôle of hyperesthesia or even whether genuine sensory abnormalities exist. Hyperesthesia has been included as an essential part of the syndrome because the subjects all reported increased subjective sensitivity to stimuli in the involved modalities. No objective tests were made to elicit sensory abnormalities beyond the rough neurological examination. It is also impossible to analyse the etiological factors involved. Evidence from other sources suggests a constitutional determining factor but it is impossible to rule out abnormal conditioning in early life or neurotic symptom formation. In any case, the severity of this syndrome as a psychiatric disorder appears to be principally determined by the nature of the associated personality reaction.

Probably every person is to some degree reactive to startling stimuli but recovery is usually quick and successive presentations of the stimulus rapidly lose their effectiveness. The writer once heard a medical college professor state that the most effective method of reestablishing breathing in respiratory failure with good heart action was a finger vigorously thrust into the rectum. Adolescent pranksters know only too well the dramatic effect of a finger unexpectedly stuck into the gluteal fold in the vulgar but widespread maneuvre known as "goosing." Although this embarrassing affront to personal dignity undoubtedly derives much of its effectiveness from its flaunting of sexual taboos, psychosexual interpretations of the phenomenon are inadequate to explain the startling effects of unexpected loud sounds or physical contacts in areas apart from the erogenous zones. Another factor of importance in explaining the effectiveness of "goosing" is the deflating effect which the maneuvre has on its victim's ego. The writer

recalls a rather pompous college student who could always be depended on to "jump a mile" when subjected to this indignity. His classmates persisted in stimulating him at inopportune moments long after his response ceased to be funny and it became apparent that they derived satisfaction in seeing him squirm under their aggressions. Social situations such as this may become profoundly important in insidiously determining a person's attitudes toward life when he becomes the object of more than his share of aggressive behavior from those who would normally inhibit their sadistic impulses. Society does not always appreciate the devastating effects of this type of "condoned" or legal torture on the person who does not possess the resources to extricate himself unaided from the situation. With psychotherapy the prognosis is good since relief is quickly obtained by placing the person in a stable isolated environment devoid of startling stimuli.

Summary

While acting as civilian neuro-psychiatric examiner at an army induction station from November 1940 to November 1943, the author encountered three cases presenting an interesting psychiatric syndrome characterized by hyperesthesias, excessive startle reactions to unexpected stimuli and associated personality reactions which may become incapacitating. Brief clinical studies are included of these three cases which suggest that some individuals showing the excessive startle reaction may become seriously incapacitated by undesirable personality reactions. The person's social difficulties begin when the nature of his disability is discovered and he becomes the victim of incessant and tormenting practical joking. The etiology of the syndrome is unknown but constitutional factors seem important. It is roughly estimated that the syndrome occurs with a frequency of 1 in 2000 among young adult males.

It is suggested that the diagnosis of startle neurosis adequately describes this clinical syndrome. It is believed that it may be indicative of central nervous system instability and is a valid cause for rejection for military service.

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THE EFFECT OF ELECTRIC SHOCK THERAPY UPON CEREBROSPINAL FLUID PRESSURE, PROTEIN AND CELLS [1]

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The present report was prompted by the accidental finding of a protein content of 180 mgm. per cent per 100 cc. in the cerebrospinal fluid of a patient who had received 4 electric shock treatments. Her condition was that of agitated depression with menopausal syndrome. Careful review of this case revealed only equivocable evidence of an organic etiology for her somatic complaints and provided no physical basis for her symptoms of depression and agitation. Following further observation and the development of cerebellar signs, final surgical intervention demonstrated an ependymoma arising from the lower end of the fourth ventricle. Before it was possible to reach the definitive diagnosis, it was decided to investigate the effect of electroshock therapy upon cerebrospinal fluid protein and cellular content.

PROCEDURE

The findings to be discussed were obtained from observations made upon 21 psychiatric patients. Nineteen of these were females, aged 32 to 65 years; average age, 40.6 years. Two were males, 35 and 51 years of age. The clinical impressions of 11 females and 2 males were manic-depressive, depressed psychoses. The remaining conditions were: schizophrenia, paranoid—4 cases; involutional melancholia—3 cases; manic-depressive, manic psychosis—1 case. Additional pertinent clinical findings will be discussed later. All patients received complete physical examinations, blood counts, urinalyses, electrocardiograms, and x-rays of the spinal vertebrae prior to shock therapy. Only one case (vid. inf.) demonstrated a noteworthy clinical abnormality, having moderate diabetes mellitus. Blood and cerebrospinal fluid serology was negative in all cases.

Electric shock treatments were produced with the Offner electric shock apparatus (80 to 130 volts; 350 to 450 milliamperes; 0.3 to 1.0 seconds). They were administered, in almost all cases, thrice weekly, seldom more frequently than every other day. All patients were curarized (intravenously) before each treatment. Lumbar punctures were performed as follows: (1) preceding electroshock; (2) 30 minutes, and (3) 24 hours after the first electroshock treatment; (4) 24 hours after the last electroshock treatment. At each of these procedures, which were performed with the subjects in the lateral decubitus, the cerebrospinal fluid pressure, protein and cell content were obtained. The protein determinations were performed by the sulfosalicylic acid (turbidity) method described by Ayer, Dailey, and Fremont-Smith(1).

RESULTS

1. *Cerebrospinal Fluid Pressure.*—

a. Before shock treatment	Range: 20 to 260 mm. H_2O.	Average: 155.2 mm. H_2O.
b. 30 minutes after first EST	Range: 38 to 180 mm. H_2O.	Average: 135.3 mm. H_2O.
c. 24 hours after first EST	Range: 34 to 240 mm. H_2O.	Average: 141.7 mm. H_2O.
d. 24 hours after last EST	Range: 90 to 240 mm. H_2O.	Average: 151.1 mm. H_2O.

[1] From the Wisconsin Psychiatric Institute, University of Wisconsin.

Examination of the individual results demonstrates only that the cerebrospinal fluid pressure tended to be higher in tense or agitated patients. It will be seen from the above cumulative results that the pressure was decreased during the hypnoidal stage occurring 30 minutes after electric shock treatment. There could be found no correlation between cerebrospinal fluid pressure and the type of response to treatment, number of treatments, or cerebrospinal protein or cellular content.

With the exception of one patient, the post-shock cell contents of the spinal fluids were consistently within the normal range. However, it will be noted that the average cell count rose somewhat during treatment. If these data are calculated without the results of this patient (R. W.), whose cerebrospinal fluid exhibited 4, 28, 21, and 3 cells per cu. mm. respectively, on the 4 specified occasions, the differences between the cell count averages are found to be negligible (*i.e.*, 0.2 cells per cu. mm.). Furthermore, individual changes in cerebrospinal fluid cell count followed no relationship to pre- or post-shock status or the number of shocks administered. Patient R. W. was a moderately severe diabetic who also exhibited physical, psychiatric and electrocardiographic evidence of advanced arteriosclerosis with hypertensive cardiovascular disease. She was the only member of the group in whom there was evidence of diabetes, hypertension or arteriosclerosis of a significant degree, or any other pertinent physical condition. One patient exhibited 7 cells per cu. mm. before shock therapy; thereafter a normal cell count occurred.

2. *Cerebrospinal Fluid Cells.*—

a. Before first EST	Range: 0 to 7 cu. mm. Average: 0.87 cu mm.
b. 30 minutes after first EST	Range: 0 to 28 cu. mm. Average: 3.9 cu. mm.
c. 24 hours after first EST	Range: 0 to 21 cu. mm. Average: 4.1 cu. mm.
d. 24 hours after last EST	Range: 0 to 6 cu. mm. Average: 1.3 cu. mm.

These findings may be analyzed in an analogous manner to those of cerebrospinal fluid cytology. Again, patient R. W. was the only member of the group who demonstrated significant changes in cerebrospinal fluid protein content. The protein determinations performed on the 4 specified occasions revealed 23, 35, 52, and 27 mgm. per 100 cc. respectively. However, in no other case was there a significant change in protein content and such minor differences as were noted were unrelated to pre- or post-shock status or the number of shocks administered. In no other case was a cerebrospinal fluid protein of more than 44 mgm. per 100 cc. recorded.

3. *Cerebrospinal Fluid Protein.*—

a. Before first EST	Range: 17 to 39 mgm. per 100 cc. Average: 26.5 mgm. per 100 cc.
b. 30 minutes after first EST	Range: 13 to 35 mgm. per 100 cc. Average: 21.6 mgm. per 100 cc.
c. 24 hours after first EST	Range: 15 to 52 mgm. per 100 cc. Average: 25.8 mgm. per 100 cc.
d. 24 hours after last EST	Range: 15 to 44 mgm. per 100 cc. Average: 26.3 mgm. per 100 cc.

DISCUSSION

The series of patients reported shows a preponderance of affective psychotics. W. L. Bruetsch *et al.*(2) have discussed the uncommon finding of increased cerebrospinal fluid protein in this group. Merritt and Fremont-Smith(3) concur in the opinion that the protein content is seldom abnormally high in the manic-depressive psychoses. Both groups of authors give similar findings for schizophrenics. It will be observed from the data collected in our series that none exhibits

a hypernormal pre-shock cerebrospinal fluid protein content, and only one shows a slight increase in cell count. The criteria employed are those provided by Merritt and Fremont-Smith(3); *i.e.*, protein, −15 and 45 mgm. per 100 cc.; cells, −0 to 5 cells per cu. mm.; pressure, −70 to 180 or 200 mm. water (patient in lateral decubitus). Examination of the findings reveals furthermore that only one patient exhibited a clinically significant change in cerebrospinal fluid protein and cell content during shock treatment. These abnormal findings were present 30 minutes and 24 hours after the first electric shock treatment and disappeared within 10 days after 5 subsequent electric shock treatments. This manic-depressive, a depressed psychotic, was 57 years of age and exhibited physical, psychiatric and electrocardiographic evidence of arteriosclerosis with hypertensive cardiovascular disease and was, in addition, a moderately severe but well controlled diabetic. During and following shock treatment she showed no focal evidence of cerebral vascular disease, but suffered an unusually severe memory loss. In spite of her recovery, after electric shock therapy, from the immediate depression, shock treatment was followed by an increase in intellectual impairment. In this case, one might hypothecate the occurrence of small cerebral or meningeal vascular accidents associated with the convulsions. One or more of these hemorrhagic lesions may have been sufficiently superficial to produce a meningeal reaction and a subsequently increased cerebrospinal fluid protein and pleocytosis. Such post-shock cerebral and meningeal lesions have been described by Heilbrunn(4), Heilbrunn and Weil(5), and Alpers and Hughes(6) in animals, and Ebaugh, Barnacle and Neubuerger(7) and Alpers and Hughes(8) in man.

Several of the cerebrospinal fluid pressures recorded were abnormally high. This finding was especially common before shock therapy. In every case, it could be accounted for by the patient's tense or agitated condition.

In conclusion, our findings warrant the suggestion that the cerebrospinal fluid protein and cell contents be ascertained, following the first electric shock treatment, at least, when this type of therapy is performed upon any patient who exhibits a significant degree of hypertensive or arteriosclerotic vascular disease. A control lumbar puncture, executed before shock treatment would, of course, be of value. It is our experience that electric shock therapy should not be given sooner than 48 hours after lumbar puncture, in view of a possible fatal outcome(9).

SUMMARY

The cerebrospinal fluid protein and cell content and pressure was obtained before, during and after a series of electric shock treatments performed upon a group of 21 psychotics.

In only one case, a diabetic, hypertensive, arteriosclerotic woman, was a significant change noted in protein and cellular constituents. This occurred after the first shock treatment and disappeared within 10 days after 5 subsequent treatments.

Occasional elevations of cerebrospinal fluid pressure were noted. These could be correlated with the patients' psychomotor status.

It is concluded that the cerebrospinal fluid protein and cell contents should be ascertained, before and after electric shock treatment, in patients who exhibit significant degrees of arteriosclerotic or hypertensive vascular disease.

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REVIEW OF PSYCHIATRIC PROGRESS IN IBERO-AMERICA

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So fertile was scientific activity in the field of psychiatry in the various Ibero-American countries during 1943 that it is difficult duly to appraise the many articles written and the great number of projects carried out.

Ecuador

Ecuador's flourishing school of psychiatry, headed by Prof. Julio Endara, published many reports of original research, amongst them the outstanding studies of Dr. José Cruz on sex criminology. This author points out the necessity of bearing in mind the erotic behavior when establishing the validity of certain legal acts, such as matrimony and making a will, as deviation in sexual behavior is a rather frequent sign of mental alienation.

Three years ago Endara, on the basis of a statistical study of the results of shock therapies, found insulin superior to cardiasol, although the preference may depend on the clinical aspect of the case or other factors.

Prof. Jorge Escudero, dealing with the clinical and psychopathological problems of schizophrenia, listed the difficulties we encounter in considering schizophrenia as a disease or a clinical syndrome. He agrees with Peters and Bumke that we are still very far from understanding the fundamental derangement in schizophrenic states.

Perú

Great homage is also due to the brilliant and productive psychiatric school of Peru, with such exponents as the renowned Honorio Delgado and J. O. Trelles.

The Peruvian school holds a foremost position as regards specialized experimental and anatomic-clinical research, *e.g.*, the recent work on cysticercosis of the brain, by S. E. Bernales and H. Encinas, who call attention to the frequency of this disease in their country, thereby corroborating a similar statement previously made by J. O. Trelles and J. Lazarte.

Humberto Rotondo interested himself in the psychic effects of mescalin intoxication. In the three individuals he studied, he observed psychopathologic manifestations which seem to deserve the name "mescalin psychosis." On resorting to the method of K. Zucker he obtained very interesting and original results, especially as regards experimental schizophrenia.

Carlos G. Noriega, studying the action of bulbocapnin on the neuro-vegetative system of dogs, verified the intensification of the oculo-cardiac reflex, diminution of the sinus-carotid reflex and diminution of neuro-vegetative reactions produced by nociceptive stimulants, particularly accentuated in cataleptic states.

Alexandro P. Arellano made a series of studies on the effects of cardiasol. He showed that cardiasol cough sets in before the drug has reached the bulb. He therefore considered it a reflex phenomenon originating from direct pulmonary irritation.

Cesar Delgado, in his work on electroshock, states that the same indications and counter-indications apply as in the case of cardiasol, although to a lesser degree, thereby facilitating the treatment of a great number of patients because of its reduced cost.

J. O. Trelles, in a critical review of prefrontal leucotomy of Egas Moniz, inclines to the view of Moniz concerning the interruption of vicious nervous circuits which determine mental derangement, preferably that worked out by Freeman and Watts. According to this author, the main indications for this treatment reside in the compulsive-obsessive states, in chronic hypochondriasis. He considers psycho-surgery a new and promising field for therapeutics and experimentation.

Chile

In Chile, where psychiatry has made great strides under the guidance of the unhappy Prof. Fontecilla, men like A. Vivado, Manuel Beca, S. Rodriguez, are keeping the specialty at a high scientific level.

Octavio Peralta used atropin in the treatment of mania, obtaining a few favorable results.

Argentina

Argentina, the illustrious Ingegnieros' native country, has given to mental pathology an outstanding place in medicine. Names like Ameghino, Loudet, Gonzalo Bosch, Rojas, Belbey, Obarrio, Mouchet, Luis Balado, Bonheur and Krapf indicate but a few of the best known specialists.

In the course of last year psychiatric research was very active. Galindes and Maldonado, of the Hospital Melchior Romero, produced an excellent work on Alzheimer's disease in which they state that abiotrophic cellular atrophy is the fundamental lesion, and that such atrophy is accompanied by alterations of the vaso-connective tissue, and that the changes which had been considered as pathognomonic of this disease (senile plaques, argentophilic intracytoplasmatic granulations, neuro-fibrillar lesion of Alzheimer and capillary sclerosis) are really inconstant findings that occur not only in this affection but in others of the involutional, regressive or, still better, abiotrophic, variety as well.

Maldonado and Monastero showed how important the participation of the reticuloendothelial system is in malariotherapy.

E. Mouchet published a well-documented book, supplying an orderly exposition of the new methods employed in the treatment of schizophrenia, dealing not only with insulin and convulsion therapy by means of cardiasol and electroshock, but also touching on the problem of psycho-surgery.

Juan Carlos Pizarro discussed polymorphous deliria, suggesting their incorporation into the modern psychiatric classifications. O. Loudet, E. Beláustaguí and J. Neumeier made the "delirium of altruism" the subject of a judicious study.

Emilio Mira, the well-known Spanish psychiatrist, now living in the Argentine, published the second edition of his "Psychiatry," which met with such success in the Spanish and Portuguese-speaking countries. The book has been carefully revised and enlarged, containing a valuable appendix by Dr. Moyano on the pathologic anatomy of mental diseases.

C. Pereyra made a critical survey of the evolution of the concept of dementia precox or schizophrenia, held to be a juvenile psychosis, branching off into other forms—some of them of schizophrenic aspect—which, however, are to be considered separately. He also studied the initial stages of schizophrenia, believing that the change in character is the most frequent and characteristic element of the multifarious beginnings of schizophrenia.

Oswaldo Loudet discussed the problem of typhoid fever as a healing factor of certain psychoses, especially of the schizophrenic states.

R. Carratalá and J. C. Colzetta studied the effects of the so-called stimulating amines, comprising four groups and derived from: ethane, ethanol, propane and propanol. He points out the dangers inherent to them, especially of the German drug perostin, known as "Estimulex" in the Argentine, due to its toxicity, capable of causing a confusional state with delirious daydreaming.

Brazil

Afranio Peixoto made an exhaustive study of paranoia, giving attention especially to the manifestations of vanity, presumption, inferiority complex, megalomania and the states of individual and collective persecution mania.

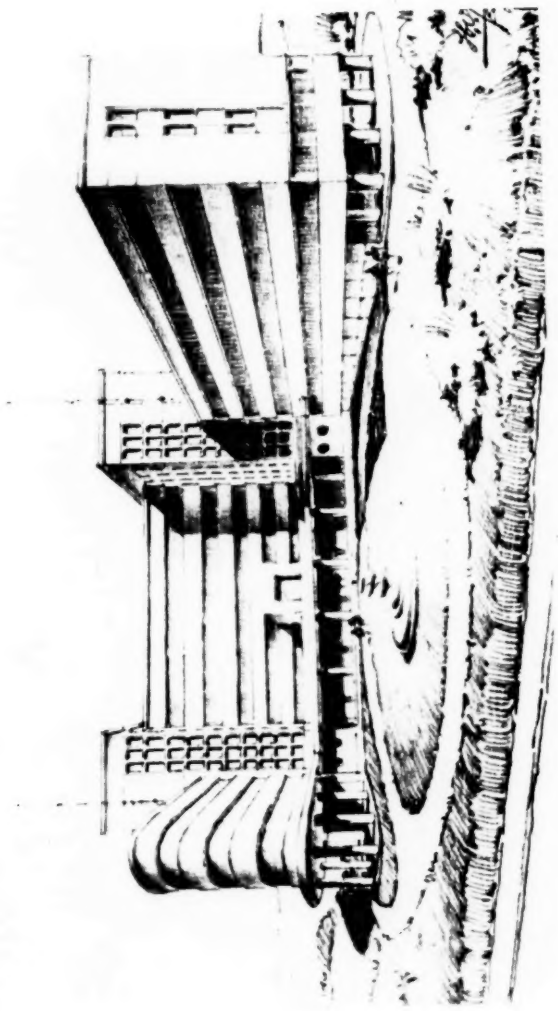
Aluizio Marques and Antonio R. de Mello have been investigating hereditary diseases of the nervous system running in families, publishing valuable contributions supporting the unitary concept of such disorders.

José Leme Lopes published an extensive monograph on the interpretation of Rorschach's psychodiagnosis of the anxiety states.

Carlos Gama, professor of the Medical Faculty of Bahia, emphasized the importance of cineventriculography and cineperimyelography in neuropsychiatry.

Mesquita Sampaio and Rocha Azevedo, in a well-documented treatise, dealt with clinical physiopathology of hyperparathyroidism, including its relationship with the nervous system, for which work they were awarded a prize by the National Academy of Medicine.

José Dutra de Oliveira published an extensive work on "Physiopathology of the 'B'



Psychiatric Clinic
University of São Paulo (Brazil)

Complex," in which he brings together all that has been done in Brazil on this subject from both a clinical and an experimental point of view, particularly by the department of physiology of the Medical Faculty in the University of São Paulo (Director: Prof. F. Moura Campos).

Vicente Lara published a complete study on infantile tetany, carefully discussing the problem of differential diagnosis and therapeutics.

Paulo Pinto Pupo enquired into encephalic accidents in convulsotherapy, indicating its dangers when applied to old people or carriers of encephalic vascular injuries.

J. Bottiglieri and P. Simioni experimented with histamine in epilepsy, tabulating the results in 19 cases, one of which showed considerable and nine favorable improvement.

João Batista dos Reis and Cyriaco do Amaral Filho pointed out the importance of Steinfeld's reaction in general paralysis which, in the acute forms, yielded 91% of positive results.

A. C. Pacheco e Silva organized a course in psychiatry of war at the Medical Faculty in the University of São Paulo. Subjects covered were the following:

Dr. A. C. Pacheco e Silva.—Introduction. Psychiatry and modern warfare. Importance of psychiatric principles. Specialized Services.

Dr. Oswaldo Freitas Julião.—Systematic neurological examination.

Dr. A. C. Pacheco e Silva.—Psychiatric examination. Selective Boards. Classification of recruits. Experimental psychological methods. Individual and collective tests.

Dr. Aderbal Tolosa.—Diagnosis and treatment of non-suppurative acute encephalitis.

Dr. Fernando de Oliveira Bastos.—Mental confusion and war.

Dr. A. C. Pacheco e Silva.—Epilepsies. Psychoneuroses of war.

Dr. Paulino W. Longo.—Treatment of psychoneuroses of war.

Dr. João Carvalhal Ribas.—Depression states. Anxiety syndromes. Situation psychoses. Neurasthenic and psycho-asthenic states.

Dr. Olyntho de Mattos.—Agitation states. Psychomotor excitement. Impulsive reactions.

Dr. Fernando de Oliveira Bastos.—Schizophrenia and war.

Dr. Armando Caiuby Novaes.—Acute and chronic alcoholism. Mental derangement due to alcohol and toxicomanias at the front and the rear. Prophylaxis.

Dr. Paulo de Camargo.—Feeblemindedness. The feebleminded in the army.

Dr. Pedro Augusto da Silva.—Psychopathic personalities in the army.

Dr. Paulo Pinto Pupo.—Craniocerebral traumatisms. Immediate and delayed syndromes and sequels.

Dr. A. C. Pacheco e Silva.—Syphilis and war.

Dr. Antonio Jarbas Veiga de Barros.—Liquor in neuropsychiatry.

Dr. H. Veiga de Carvalho.—Military psychiatric expert knowledge.

Dr. A. C. Pacheco e Silva.—Malingerers. Undisciplined. Deserters and traitors from the standpoint of psychiatry.

Dr. Nelson Pires and Dr. Henrique Mendes.—Legislation. Rules. Exclusion from military service. Internment. Dismissal and re-education of psychopaths.

Dr. Durval Marcondes.—The child in times of war. Measures of mental hygiene.

Dr. A. C. Pacheco e Silva.—Collective psychology. War and Psychiatry. Psychoses of war. Mental prophylaxis in times of war.

There is no doubt that once the new hospital, the building of which has recently been undertaken, is ready, an enhanced educational activity at the psychiatric clinic of São Paulo will result. The new hospital will have five floors with wards for 150 beds, 75 for each sex. On the first floor will be the dispensaries in sufficient number to facilitate the separation of the patients according to clinical types. There will be waiting and resting rooms enabling modern therapeutic methods to be put into effect. Communicating with the dispensaries will be lecture rooms for practical demonstrations accommodating small groups of students, who will thus receive instruction in diagnostic and treatment techniques. On the same floor will be the sections for physiotherapy, hydrotherapy, massage, electrotherapy, etc.

On the second floor will be the offices of the professor and his assistants, the archives of the clinic, offices of the secretary, the library, the museum, the sections for genealogy, photographs, films and records, so as to facilitate the assembling of abundant didactic material. There will also be a carefully planned amphitheatre holding 150 persons. The section of psycho-surgery will be attached to that of electroencephalography.

On the remaining floors will be the rooms, wards and other quarters for patients. The whole installation will be the last word in modern construction and equipment.

The importance of teaching the neuropsychiatry of childhood made it necessary to set aside special sections for children where they can be observed and treated in line with modern medico-pedagogical methods.

The top floor will be taken up by experimental psychology with sound-tight compartments, also accommodation for both the clinical and administrative staff and the nurses.

According to estimates made the whole project will come to about Cr$15.000.000 (approximately U. S. $750,000).

Mexico

B. Caravedo dealt with the social treatment of the mentally ill, soliciting the cooperation of the state, priests, physicians and sociologists with a view to establishing the norms of mental hygiene.

Ramirez Moreno emphasized the necessity of neuropsychiatric screening of those to be drafted into the army and outlined a plan to that end. He also made a careful investigation of treatment by electroshock, concluding that it is an efficient means, and that its complications and accidents are less frequent and severe than those following cardiazol.

Bolivia

M. Leon made an interesting study of the mentality of the native population.

Colombia

Llinas P. A. demonstrated the harmful influence of the cinema on addicts, and its injurious effects in promoting juvenile criminality.

Honduras

J. A. Megia studied changes in personality with post-operative psychosexual inversion, recommending conservative surgery in cases of this nature.

Puerto Rico

L. M. Movales dealt with the problems of mental hygiene with reference to the students of his country, suggesting measures to maintain mental hygiene in college and university students.

Venezuela

Delgado Blanco, Mir and Graterol studied the comparative value of luetic reactions in the spinal fluid, giving special attention to the reactions of Takata Ara and Ida.

Quintero Muro suggested the application of pyreto-therapy with strepto-staphylopyocyanic vaccine in the treatment of certain mental diseases, believing that this therapeutic process does not affect the physical state of the patient as much as malaria.

CASE REPORTS

ATYPICAL POST-METRAZOL STATUS EPILEPTICUS

Status epilepticus is one of the rare complications of metrazol convulsive therapy. In checking 41 likely references only 4 case reports have been found. (1) One case of status epilepticus is reported to have followed the application of electroshock therapy. It responded to ether anaesthetization after sodium phenobarbital given intravenously had failed. (2) Two fatal cases are reported to have resulted from the injection of 5% triazol intramuscularly. The first case treated with triazol 3 cc. was not helped by morphine gr. $\frac{1}{6}$, and died 2 hours and 13 minutes after the onset of status epilepticus. The second patient expired about 20 minutes after the administration of triazol. (3) A fourth case is reported in which status epilepticus occurred after the intravenous injection of 4 cc. of a 10% solution of metrazol. Some days later status epilepticus was produced again in the same patient by the injection of 2.5 cc. of metrazol. Both attacks were controlled by the intravenous injection of sodium amytal gr. $7\frac{1}{2}$. At this hospital, after using metrazol for over 5 years and having completed treatment on 615 persons, only 1 case has been encountered. In all 5 cases the status epilepticus occurred with the first administration of the convulsive agent.

The amount of metrazol bears no relation to the occurrence of status epilepticus. Frequently (4) much larger doses have been administered during the course of treatment at this hospital. The highest single dose given has been 20 cc. The greatest amount given at any one time in repeated doses was 30 cc.; 15 cc. failing to produce a convulsion at the end of 2 minutes was followed by an additional 15 cc. of the 10% solution of metrazol.

This patient was 19 years of age, a factory worker and amateur baseball player. His sister had been a patient in this hospital in 1927 for 9 months. She is apparently quite well now. It is reported that the patient suffered a slight mental upset in 1940 which lasted 3 weeks. At that time he could not concentrate, was seclusive and cried easily. The onset of his present attack is reported to have occurred 3 weeks prior to his admission, September 8, 1943. Some of his mental symptoms were as follows: he went out on the street improperly clothed; he seemed to think that he was playing baseball; spoke of hearing bells ringing; refused to eat because he thought his food was poisoned. In the hospital he was confused, uncommunicative, indifferent and restless. At times he was quite noisy and often he would pound the wall. He stated that he pounded the wall because he was happy. Cerea-flexibilitas could occasionally be demonstrated. He readily admitted that he heard voices coming from the radiator. Physical examination was negative except that the patient was of asthenic build. Blood pressure 100/80. Neurological examination was satisfactory. Blood Wassermann, chest X-ray, preliminary X-ray of the thoracic vertebrae, blood count and urinalysis were all negative. Diagnosis: schizophrenia—catatonic type.

On October 9 at 10 a.m. the patient received his first treatment with metrazol. The initial dose was 6 cc. of a 10% solution administered intravenously. Previous to the metrazol, $3\frac{1}{4}$ cc. of intocostrin, *i.e.*, 65 mgs. of curare, were given. Throughout the convulsion and following it, there was profuse salivation. Following the convulsion cyanosis persisted and it was thought that there was spasm of the epiglottis. The patient was turned over so that the saliva could drain from his mouth, but the cyanosis persisted. Respiratory movements were limited and frequently there were periods when the movements of the chest wall were very slight. Muscle twitchings of the legs were also observed. Although clinically the respiratory embarrassment did not appear to be due to the curare, an ampule of prostigmine was given intravenously at 10.10 a.m. The patient's condition continued unimproved and although the heart function was satisfactory, 1 digifoline ampule and 2 additional

ampules of prostigmine were given at 10.25. At 10.30, 1/150 gr. of atropine was given subcutaneously in an attempt to control the salivation. At 10.45 a.m. a diagnosis of atypical status epilepticus was made and sodium luminal gr. 5 was administered subcutaneously. At 10.55 a.m. the patient's condition commenced to improve and recovery was uneventful. The patient slept during most of the remaining day and night. On October 10 he appeared to be his usual self and he has remained well physically to the time of reporting his case.

Apparently cyanosis may accompany an atypical form of status epilepticus. It might be argued that the above was not a case of status epilepticus. However, the patient's condition persisted for almost an hour and then responded immediately to a standard treatment of status epilepticus. True, the condition is rare and therefore perhaps does not merit too much time and attention. It has, however, caused 2 known deaths and if prompt treatment measures had not been available in the above case, a third death might have resulted. Also the possibility of status epilepticus presenting itself in other atypical forms should be borne in mind.

Summary.—A case of atypical status epilepticus is reported in which convulsive spasms were slight and tended selectively to affect muscles associated with respiration with the result that cyanosis was deeper than the degree observed in ordinary status epilepticus. Status epilepticus occurs infrequently, it may be atypical and difficult to recognize. Fatal cases have been reported. On this occasion it was amenable to treatment. Its occurrence bears no relation to the size of the dose of metrazol used. In the cases reported it has followed the first administration of the convulsive agent.

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COMMENT

PRESIDENT'S LETTER

The American Psychiatric Association, the oldest medical society in the United States, is starting on its second century. Many important problems confront us at this moment and some of these demand immediate attention. I shall attempt to list a few of the more important ones.

What rôle shall The American Psychiatric Association play in the care and rehabilitation of psychiatric casualties from the present war? Some of our members have wished to set up an organization in Washington and to attempt to influence legislation. However, the majority of those with whom I have discussed the matter do not feel that this is a proper function of the Association. Can we aid in setting up clinics for the immediate future and can we suggest plans that will ensure better psychiatric care for veterans? There has been a good deal of criticism of veterans' hospitals set up in isolated communities. Might it be possible for some plan to be worked out whereby psychiatric hospitals could be set up in close physical and intellectual approximation with a number of the leading medical schools in the country? Might arrangements be made for the U. S. Government to subsidize outpatient treatment of veterans in recognized psychiatric clinics?

The problem of postgraduate training in psychiatry for doctors from the armed services must be considered carefully and a plan worked out. There will probably be two groups of physicians: (1) Older men with some experience in psychiatry who want primarily refresher courses and who wish to go on from where they left off. (2) Younger men who have little or no training in psychiatry but wish to become specialists in psychiatry and be eligible for certification by the American Board of Psychiatry and Neurology.

Almost nothing has been done by our Association in the field of industrial psychiatry. A new committee should undoubtedly be set up to deal with this and we should attempt to work out some plan for cooperating with industry and with labor so that the material of psychiatry will be available to these groups.

From many sources there has been the request that The American Psychiatric Association work out closer relationships and possible affiliation with the National Committee for Mental Hygiene. Since the National Committee for Mental Hygiene is primarily an educational and publicity organization, might The American Psychiatric Association throw its support back of such plans by the National Committee for Mental Hygiene, encouraging and participating in further education of the public?

Shall The American Psychiatric Association attempt to expand to embrace all of the Americas? At the present time we do have members outside of the United States and have taken in corresponding and honorary members from all over the world. We have, however, considered Canada as an integral part of our Association. The present editor of our JOURNAL is a Canadian. A number of our past presidents have been Canadians, and we have held numerous meetings of the Association in Canada. Should we now make a definite effort to expand in Mexico, Central and South America?

If any such plan of expansion is to be considered, should some new plan for the AMERICAN JOURNAL OF PSYCHIATRY be considered? Should editions in Spanish and/or Portuguese be printed? Should we ask for articles routinely from these other countries? Our editor has considered all these problems and has in mind certain plans for corresponding members who would send letters telling of the progress of psychiatry in these other countries. This is a very important and thoroughly desirable measure. Does the Association, however, wish to go even further in such plans and will the general expansion thought of by the Association mean that we shall soon have to look forward to a

monthly issue rather than a bi-monthly issue of the JOURNAL?

It has been recommended by the Committee on Public Relations and by many others that we should establish closer relationships with many other organizations. This whole problem must be considered carefully by the Council and attempts made to work out practical plans for carrying out these recommendations.

Shall The American Psychiatric Association establish a permanent home with library, museum, and general facilities for directing the work of the Association?

Two specific problems that must be considered are: first, the relationship of affiliate societies; second, the problem of sections. No over-all plan has really been worked out for dealing with these two groups.

The problems listed above form some of the important questions which require action at the earliest possible moment. With this in mind I hope to call a meeting of the Executive Committee in the very near future and, if possible, a Council meeting soon after that. It has been agreed that we shall devote at least three days in December to a Council meeting to consider the many important problems coming up before us. It is my hope that we can take definite steps on some of these problems in the near future rather than waiting until December and that we can have a well-rounded program for consideration at the December meeting. Many other important problems are not mentioned at this time. Some of them are already being handled by special committees; others are not so immediate and can wait until December for consideration.

I hope that any of the members of the Association will feel free to write to me at any time, giving their views on any of the problems mentioned or pointing out other problems which have not been mentioned and which they feel need immediate attention.

KARL M. BOWMAN.

THE CENTENNIAL MEETING

The Centennial Meeting of the Association is now history—a meeting distinguished in its special observances, its program, and its attendance. Meeting in Philadelphia, the city of its birth one hundred years ago, the Association paid tribute to the memory of the Original Thirteen, and on its opening day had the unusual honor of being greeted by the son of one of that illustrious group, Mr. Franklin B. Kirkbride. Other special features on that day included historical papers on two "patron saints" of the Association, Benjamin Rush and Dorothea Lynde Dix.

On the third day of the sessions representatives of the various hospitals associated with the Original Thirteen were introduced, and the Fellowship Certificates were handed to the recipients by Benjamin Rush, Jr., a descendant of the great physician who is properly looked upon as the father of American Psychiatry. One of the representatives introduced was a collateral descendant of John Minson Galt, one of the Original Thirteen, and two of the daughters of Thomas Kirkbride were also presented. Greetings to the Association were read from President Roosevelt, the Royal Medico-Psychological Society of Great Britain and the American Psychoanalytic Association. Following the example of the meeting held one hundred years ago, reports of several special committees were read. Instead of such subjects as Asylums for Idiots and Demented, Support of the Pauper Insane, and Moral Treatment of Insanity, however, which are found in the records of 1844, we find Hospital Administration, Mental Hygiene, Psychoanalysis, Psychotherapy, Shock Therapy, and International Psychiatry.

The Centennial Dinner on Wednesday evening, attended by 1000 members and guests, was the climax of the observance. Dr. Strecker, the President, made the presentation of the special edition of the Centenary Volume, "One Hundred Years of American Psychiatry," a significant book from the point of view of contents, typography and binding—just selected by the American Institute of Graphic Arts as one of the finest examples of current bookmaking. A specially bound copy of this volume, of which the

inspiration and most of the editorship are the work of Dr. Gregory Zillboorg, was presented to the representative of the President of the United States, to the Surgeons General, and a number of others. Following this pleasant ceremony the Centennial Song, composed for the occasion by Mr. Austin M. Davies, our invaluable and versatile Executive Assistant, and his wife, was sung, and a play, written by Doctor Zilboorg and introducing such worthies as Isaac Ray, John P. Gray, Dorothea Lynde Dix, and former Governor Alfred E. Smith, was enacted by a professional cast. The play presented forcefully the aims of the founders and the conflict between politics and their ideals, emphasizing at the same time the fact that the ideals of the Original Thirteen were fundamentally those of the Association today as well.

One other special Centennial feature calls for special mention, namely the splendid historical exhibit prepared under the supervision of Dr. Robert S. Bookhammer. A photograph of each of the former Presidents was on display, together with a significant paragraph from his Presidential Address. There were also other photographs of historical interest, and a collection of psychiatric books published in this country in the past century. The exhibits will become the permanent possession of the Association.

Through the courtesy of Capt. Albert A. Rosner, most of the special centennial observances were recorded phonographically, the records to be deposited in theArmy Medical Library.

A detailed account of the proceedings of the four-day sessions will be found in the news section.

WINFRED OVERHOLSER.

BUTLER HOSPITAL CENTENNIAL

On May 10, 1944, Rhode Island's oldest hospital celebrated the one hundredth anniversary of its incorporation.

Two prominent citizens of the state, Mr. Nicholas Brown and Mr. Cyrus Butler, had made the hospital possible by contributing substantial sums of money. The larger contribution having come from Mr. Butler, the institution was named in his honor. A state charter was granted in 1844 and Dr. Luther V. Bell, superintendent of the McLean Asylum, was commissioned to spend several months studying newer developments in European hospitals. Meanwhile Dr. Isaac Ray, superintendent of the Maine State Asylum, had been engaged to head the new hospital at Providence; and when Dr. Bell returned these two leaders collaborated in plans for its construction. Building was begun in 1846 and patients were admitted in 1847.

For $89,000 it was possible to erect an E-shaped building accommodating 100 patients; and in keeping with the spirit of the founders the rate for complete care and maintenance was set at $2 per week. This was in the 1840's. In 1944 Butler Hospital has accommodation for 175 patients and its buildings and equipment, including laboratories, facilities for all appropriate therapies and quarters for a great variety of occupational and recreational activities, are valued at almost $2,000,000. The invested funds of the hospital exceed another million. Throughout the hundred years its philanthropic purpose has been maintained, and even today more than 70 per cent of its patients pay less than the actual cost of care.

Butler Hospital has had six superintendents during its hundred years; three of them, including the present incumbent, Dr. Arthur H. Ruggles, have served as president of The American Psychiatric Association, the hospital's contemporary of equal age.

Noteworthy and probably unique in American hospital history is the record of weekly visits to the hospital and the wards by the board of trustees—a record that has remained unbroken throughout the century. It is pleasing to note that the chairman of the Centennial Committee, Mr. John Nicholas Brown, a member of the board, is a great-grandson of the original benefactor of the hospital.

The guests, more than 400, who attended the ceremonies on May 10 included psychiatrists, psychiatric nurses and social workers and members of welfare organizations. Ad-

dresses were delivered by Dr. Edward A. Strecker, "The Contribution of Psychiatry to Democratic Morale"; Dr. Gregory Zilboorg, "Psychiatric Problems in the Wake of War"; Dr. Karl A. Menninger, "The War Against Fear and Hate"; Miss Elizabeth S. Bixler, "The Contribution of Psychiatric Nursing to Nursing Education"; Dr. Alan Gregg, "The Place of the Endowed Hospital in the Future." Mr. John W. Haley, "The Rhode Island Historian," gave a radio talk on the contribution of Butler Hospital to the mental health of Rhode Island.

Prepared for this occasion was an illustrated publication, "A Century of Butler Hospital," which is of permanent historical value. It contains a detailed history of the hospital and the activities of the board of trustees by Mr. William G. Roelker, director of the Rhode Island Historical Society, an account of the life and work of the first five superintendents by Dr. Ruggles, and a report on Dr. Ruggles' own administration, dating from 1922, by Dr. Zilboorg.

Each invited guest received a complimentary copy of this volume, and copies were also distributed to many university, institutional and public libraries throughout the country.

On October 4, 1944, a second celebration of a lay nature is planned, at which time the hospital will be opened for public inspection. There will be an evening public meeting at the Rhode Island School of Design Auditorium, when the Governor of the state, the mayor of the city, the director of the Department of Social Welfare, and the president of the Rhode Island Medical Society will bring greetings to the century old hospital.

The JOURNAL would like to add its tribute and appreciation to the splendid 100-year record of Butler Hospital, of the achievements of its six superintendents and of the kind of support it has received from its boards of trustees.

NAZI DOCTORS [1]

Although science, by definition, can know no geographic boundaries, evidence has been forthcoming in painful plenty of the effects of the Nazi virus on the mentality of certain German men of science, including mathematicians, physicists, biologists, geneticists. It is perhaps less well realized, certainly more difficult to comprehend, that the contagion can pervert the minds of physicians whose credo is, or should be, the Hippocratic Oath.

The following declaration of the Soviet Scientists' Anti-Fascist Committee dated at Moscow, May, 1944, relates to conditions in Soviet territory evacuated by the Germans during the present Russian offensive:

In violation of all international agreements, the Germans are destroying civil and military hospitals and murdering and poisoning prisoners-of-war, burning down hospital buildings together with patients in them, and deliberately spreading typhus. German doctors are participating in the planned extermination of the population of occupied territories organised by the German High Command.

We have ample evidence of atrocities perpetrated by German doctors on their own initiative. Such doctors, together with German officers and men, take part in murder and plunder. Here are a few facts:

In the town of Artemovsk in the Donetz Basin, Dr. Tuemer, head of the Public Health Department, forbade townspeople to send food to prisoners of war who were dying of starvation in his hospital. He and his underlings murdered Dr. Klaudia, surgeon, Dr. Sarah Shapiro, and a number of other medical officers. Tuemer and his underlings plundered local medical institutions. Before the Germans retreated, the following establishments were blown up by their orders: Workers' Clinics, first and second City Hospitals, Venereal Treatment Centres, local outpatients' departments of eight medical Treatment Centres, Sanitary Service Stations, Medical School, Children's Hospital, Children's Tuberculosis Sanitorium, ten Children's Nursery Schools and Infants' Homes.

In the regional centre Stalino in the Ukraine, Germans plundered and destroyed all medical schools and research institutions. Dr. Roll, Army Surgeon and Dr. Kuchendorf, Principal Medical Officer, took part in the destruction of these institutions. We found similar destruction at almost all medical institutions in Poltava, Kremenchug, Zaporozhye, Dniepropetrovsk and other cities. The actions of these doctors, contrary to the laws of all human morality and the traditions of medical science, and their crimes and excesses made them worse than wild beasts. Dr. Taras Zhvaniya of the Kremenchug City Hospital, who was a prisoner of the Germans, ... witnessed the execution of

[1] Cf. "Medical Ethics in Peace and War" in the news section of this issue of the JOURNAL.

thirty prisoners, of whom twenty-one were doctors. On the orders of the Principal Medical Officer of the prisoners-of-war camp, the following Soviet doctors were shot: Dr. Kreinis Taganorg Forstein from Baku (paediatrist), Dr. Oxenberger (Surgeon), from Nikolayev, Dr. Misselmacher (paediatrist), Dr. Tuchibeky (therapeutist), from Kiev, Dr. Dmitriyev (therapeutist), from Voronezh, Dr. Yukubovsky (therapeutist), Dr. Goldberg (surgeon), Dr. Kotman (therapeutist), from Odessa, Dr. Tsitsishvili (assistant surgeon), besides others from Belisi whose names the deponent does not remember. Before execution, all prisoners were stripped to their underclothes and forced to dig their gravepit. As soon as the pit was finished Orland ordered filth from the latrines to be poured into it. He then had the prisoners driven into the pit, where they were shot by his order.

The same Orland beat Dr. Bulochnik and broke his arms, gouged out his eyes with a gun and broke his pelvis. On Orland's orders, Bulochnik and 14 other doctors were then shot in the presence of prisoners-of-war. In addition to these crimes by Orland, the German Doctors Schulke and Brueck were present at the shooting. A former prisoner-of-war in the camp and an eye-witness states:

"In Kremenchug I saw how 80 war prisoners were shot (among them 2 doctors—Drs. Portnov and Hekker) in the presence of the German doctors."

. . . . It was the practice of German doctors forcibly to drain the blood of children and adolescents. Documentary evidence shows that in one village, district German police detained 40 children, all of them below the age of 13 years. These children were taken to the German Army Hospital at Starotitarovskaya, where all blood was pumped out of them. All 40 children died. German doctors used Soviet citizens as guinea pigs with poisonous substances and for operations. In the city of Orel our Medical Commission, headed by Nikolai Burdenko (Academician) established the fact that the Germans deliberately poisoned 40 workers from a sheet-metal shop and then placed them in the German hospital for detailed clinical and laboratory examination. The victims were frequently photographed and demonstrated to German doctors passing through the town. All this was done for testing the efficiency of new medicines.

In view of these and many similar facts concerning the crimes committed by men with medical diplomas, Soviet doctors can no longer maintain silence. They call on their colleagues of all United Nations to place a brand of shame on German army doctors who have converted medical practice into weapons for the destruction of life. We beg all our colleagues not to let the doctors in Hitler's army think their diplomas will save them from the inevitable retribution, or that they will not be made to answer for their crimes together with other Hitlerite criminals.

Signed: Paren Derzhavin, Chairman Soviet Scientists Anti-Fascist Committee; Nikolai Burdenko, Academician-Member Extraordinary State Commission for Establishment of Investigation of Crimes of German Fascist Invaders. *Academicians:* M. Auerback, A. Abrikosov, A. D. Speransky. *Professors:* I. G. Rufanv, T. Krasnobayer, A. N. Sysin, I. Razenkov, A. Bagdasarov, N. Semashko, S. Khalatov, N. Priorov, V. Gilyarovsky, K. Kekcheyev, V. Gorinevskaya, L. Koreisha, O. Magidson, P. Anokhi, V. Shemov, O. Podvysotskyaya, G. Speransky, F. F. Andreyev, V. Parin, P. Sergiyev, R. Luria, V. Vinogradov, M. Malinovsky, V. Levit, V. Trutnev, A. Letovat, I. Kochergin, A. Cherkes, M. Tsekhnovister, V. Molchanov, V. Skvortsov, D. Rossiisky, M. Pevsner, N. Shereshevsky, V. Kheroshko, D. Burmin, G. Lang, I. Davidovsky, M. Margulis, A. Rakhmanov.

The foregoing statement is quoted from the South African Medical Journal, May 27, 1944.

PSYCHIATRIC IMPLICATIONS OF THE WAGNER, MURRAY, DINGLE BILL

The Wagner, Murray, Dingle bill (S. 1161) is the subject of much controversy at present as between those both within and outside of medicine who differ on the question of how medical services shall be distributed. While it is not always clear to either the antagonists or defenders of the bill, this measure deals primarily with problems of availability of service and not with gaps in science or medical education. Without in any way entering into the pros and cons of the bill, there is one provision that is of definite interest to psychiatry. On page 50, Section 908 of S. 1161, the bill reads as follows:

"Application for Hospitalization Benefits. Sec. 908. No application by an individual for hospitalization benefits shall be valid under this title with respect to any day of hospitalization if such application is filed more than ninety days after such day, or with respect to any day of hospitalization for mental or nervous disease or for tuberculosis after such diagnosis has been made."

According to this section, an application for hospitalization benefits would be invalid with respect to any day of hospitalization after a diagnosis of nervous or mental disease had been made. This carries with it several unfortunate implications.

It is quite in order that this bill should not attempt to revolutionize the widely established principle of state hospitals and there is good reason for exempting the patients of state hospitals from its provisions; but it is a mistake to conclude that all or nearly all psychiatric patients are in public mental hospitals or are suffering from disorders warranting commitment. Our general hospitals have large numbers of psychoneurotic patients whose need of hospitalization should come within the range of that bill if that is to be the way medical service is to be provided in the United States, and nothing should be done to discourage the recognition of this responsibility by general hospitals.

If strictly applied, this provision would eliminate all neurological cases.

Finally, it would tend to force the diagnosis away from psychosomatic issues toward purely somatic concepts. The neurotic element would be soft-pedaled and a promising trend in medicine would be blocked since the patient would lose his benefits and the hospital its patients if psychosomatic diagnosis were frankly recognized. It is to be hoped that revisions of the bill may take this element into account.

GEO. S. STEVENSON,
Medical Director, The National Committee for Mental Hygiene.

NEWS AND NOTES

CENTENNIAL MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION.—The centennial as such has been dealt with elsewhere in this issue. The detailed report of the regular sessions of the one hundredth annual meeting, held at Philadelphia, May 15-18, 1944, follows below, in accordance with the usual practice. The official report of the Secretary will be published in the September issue.

On the opening day the meeting was called to the order by the President, Dr. Edward A. Strecker, then the Invocation was offered by the Rev. Frederick R. Griffin, Minister of the First Unitarian Church of Philadelphia. After the brief address by Mr. Kirkbride, the greetings of the Mayor were presented by Dr. Rufus Sargent Reeves, Director of Public Health of the City. Dr. Eugene Pendergrass, President of the Philadelphia County Medical Society, welcomed the Association on behalf of the Society and of the College of Physicians of Philadelphia. A brief response to the greetings was offered by the President-elect, Dr. Karl M. Bowman. The roll of deceased members was called by the Secretary. Dr. Harry C. Solomon presented a memorial to the late Dr. C. Macfie Campbell, and Lt. Col. Malcolm J. Farrell to the late Col. Roy D. Halloran.

In addition to the commemorative papers in Section I, the morning's sessions dealt with Insulin Shock Therapy and Disturbances of Sleep, and a joint session with the American Society for Research in Psychosomatic Problems was held. The afternoon sessions were devoted to meetings of the Sections on Convulsive Disorders and Forensic Psychiatry, and two joint sessions, namely one of the Section on Psychoanalysis with the American Psychoanalytic Association, and one of the Section on Psychopathology of Childhood and the American Association on Mental Deficiency.

On Tuesday morning the following officers were elected: President, Karl M. Bowman; President-elect, Samuel W. Hamilton; Secretary-Treasurer, Winfred Overholser; Councillors: Edward A. Strecker, R. Finley Gayle, John P. S. Cathcart, Frederick P. Moersch; Auditor, Garland H. Pace. It was also voted to amend the Constitution by changing the title of the Board of Examiners to Committee on Membership. Dr. Arthur H. Ruggles read the report of his Special Committee on Psychiatry in the Armed Forces. The meeting was then turned over to Col. William C. Menninger, who presided over the presentation of papers on Psychiatry and the U. S. Army. Other sessions of the morning considered Experimental Studies and Organic Studies.

At the luncheon tendered by the Devereux Schools at noon an award of $500 was presented to Dr. William Goldfarb of New York, as a result of an essay contest of which the Committee on Research were the judges.

The afternoon sessions dealt with Psychiatry and the U. S. Public Health Service, Psychoneuroses, and Administrative Psychiatry.

The "Round Tables" held on Tuesday evening broke all records for attendance, over 2000 in all attending the various meetings. The largest meeting was that on Group Psychotherapy, over 600 forcing the adjournment to the main ballroom! Other groups considered Administrative Psychiatry, Child Psychiatry, Civilian Utilization of War-Fostered Trends, Industrial Mental Hygiene and Psychiatry, Occupational Therapy, Psychiatric Nursing, Psychopathic Personality, Malingering, and the Youth Correction Authority. Following the "Round Tables" an Open House was held, with a showing of some of the survivors from the antediluvian era of cinemaphotography.

The three papers of the morning session of Centenary Day (Wednesday) were presented by Maj. Gen. George B. Chisholm, Director General of Medical Services of the Canadian Army, Professor T. North Whitehead of the Harvard School of Business Administration, and Dr. Alan Gregg, the latter entitling his thoughtful and thought-provoking paper "A Critique of Psychiatry." The other proceedings of that day and evening have already been summarized, except mention of the afternoon address, illustrated with piano, by Dean Howard Hanson of

the Eastman School of Music, whose address at the Boston meeting in 1942 was one of the "treats" of the session. It need only be said that Dean Hanson came up to his usual high standard of presentation.

On Thursday morning two honorary members were elected, namely Vice Admiral Ross T. McIntire, Surgeon General of the Navy, and the Honorable Walter S. Maclay, Superintendent of the Mill Hill Emergency Hospital of London, England. Other classes of members were elected as follows: 230 members (including one reinstatement), 74 associate members, 3 corresponding members (Dr. Aubrey Lewis, of England, Dr. Julió Endara of Ecuador, and Dr. Gonzalo Bosch of Argentina). Transfers were authorized in membership status as follows: two member, 41; to fellow, 44; to life member, 13. The report of the Committee on Resolutions was accepted. In reaffirming the ideals of the Original Thirteen, the report contained these words: "Most especially does the Association reaffirm the urgent necessity of freedom from political interference in the management of public mental hospitals, and likewise the principle that the direction of such hospitals should be vested in psychiatrically trained physicians." The incoming President, Dr. Karl M. Bowman of San Francisco, California, was then inducted.

The morning session continued with a series of papers on Psychiatry and the U. S. Navy, starting with a most illuminating and inspiring address by the Surgeon General, Admiral McIntire. Other sections considered Convulsive Shock Treatment and Morale, and the concluding afternoon sessions took up Rehabilitation, Psychosomatic Studies, and Miscellaneous Topics.

The total registration was 2297, made up of 1006 members and fellows and 1291 guests—by far an all-time high; the previous record was set at the Boston meeting in 1942 with 1584.

The Committee on Arrangements under the chairmanship of Dr. Frederick H. Allen, was most efficient. The Open House has been mentioned, and it should also be recorded that a cocktail party was arranged before the Centennial Dinner, and that dancing followed the other festivities on that evening. The ladies were entertained by a special subcommittee headed by Mrs. Madeline Appel. In addition to sightseeing trips, special mention should be made of the delightful tea held at the magnificent Philadelphia Art Museum on Tuesday.

The scientific exhibits, supervised by Dr. S. Bernard Wortis, were of a high order. Numerous motion pictures were shown under the direction of Dr. Howard R. Masters. The commercial exhibits were numerous and interesting. The arrangement of the hotel was such that some of the meetings were held on the ballroom floor and others on the 18th floor. This resulted in much passing to and fro, and caused a great strain on the elevator facilities, a strain not appreciably mitigated by the hot weather. Everyone, members, guests and exhibitors alike, however, was most considerate and tolerant of inconveniences. The management of the hotel did nobly despite shortages of personnel and the inexperience of some of the employees. The press availed themselves of the informational facilities provided by the Committee on Public Education headed by Dr. C. Charles Burlingame. Despite the rigors of war news and paper shortage, the local newspapers and the national news-gathering agencies provided adequate coverage of the many interesting facts and opinions presented by the various participants.

The business transacted at the several meetings of the Council will be reported in detail in the next issue. The outstanding feaures may be summarized as follows: It was found that on account of the war New Orleans was not available for the 1945 meeting as originally planned; accordingly Chicago was selected as the convention city. Dr. Harold D. Palmer was nominated to the American Board of Psychiatry and Neurology, to serve on behalf of the Association. It was voted to hold a three-day meeting of the Council in December 1944 to consider in detail the future plans and policies of the Association. The Council recorded its gratitude to Doctor Farrar and his Editorial Board for their work in producing the Centennial issue of the JOURNAL, and to Doctor Zilboorg and his collaborators in producing the Centenary volume, "One Hundred Years of American Psychiatry." The New Orleans Society of Neurology and Psychiatry was accepted as an affiliated society.

The following officers of Sections were elected:

Forensic Psychiatry: Sara Geiger, Chairman; S. Harvard Kaufman, Vice-chairman; O. Spurgeon English, Secretary.

Psychoanalysis: O. Spurgeon English, Chairman; Robert Knight, Vice-chairman; Gregory Zilboorg, Secretary.

Convulsive Disorders: David E. McBroom, Chairman; Willard H. Veeder, Secretary.

Psychopathology of Childhood: George S. Stevenson, Chairman; Edward J. Humphreys, Vice-chairman; Oscar J. Raeder, Secretary.

The appointment of Dr. S. Spafford Ackerly to the Editorial Board of the JOURNAL was announced.

At its closing meeting the Council elected Dr. Edward A. Strecker and Dr. Douglas A. Thom to the Executive Committee, and approved the appointment of Dr. Joseph R. Blalock and Dr. Lawrence Kolb to the Committee on Membership.

Most gratifying was the large attendance of medical officers from the armed forces of both the United States and Canada, including the Surgeons General of the U. S. Army and Navy and the Director General of Medical Services of the Canadian Army. The attendance of these officers emphasized the important rôle now being played by psychiatry in the Army and Navy, and illustrated forcefully the value to the war effort of meetings of the Association.

Finally, no account would be complete without reference to the able work of the Program Committee, under the chairmanship of Dr. William Malamud. This committee, always unobtrusive but none the less one of the most important, labored diligently throughout the year, and produced a program which for general arrangement and for high quality set a mark which has only rarely been equalled and will with difficulty, if ever, be surpassed.

WINFRED OVERHOLSER, M.D.
Secretary-Treasurer.

CORRECTION.—In the legend under the portrait of Benjamin Rush opposite page 12 of Dr. Farr's article in the Centennial Number of the AMERICAN JOURNAL OF PSYCHIATRY, Vol. 100, No. 6, April, 1944, delete the words "recently acquired by the College of Physicians of Philadelphia," and the words "photo by Dr. W. N. Bradley." These statements refer to the portrait of Benjamin Rush, youthful physician (1768) opposite page 3.

The portrait by Sully was painted for the Pennsylvania Hospital in 1813, at the request of Rush's students and still hangs in the center building of the old Pine Street hospital.

INTERNATIONAL LEAGUE AGAINST EPILEPSY.—At a meeting of the American Branch of the International League against Epilepsy held in Philadelphia on May 14, 1944, the following officers were elected for the ensuing year: President, Dr. Charles D. Aring, Cincinnati; Vice President, Dr. Haddow M. Keith, Rochester, Minn.; Secretary-Treasurer, Dr. Frederic A. Gibbs, Boston.

THE PSYCHOGRAM.—The May 1944 issue of this hospital publication, which is "done once a month in the print shop of the New Jersey State Hospital, Greystone Park," is dedicated to the 100th anniversary of The American Psychiatric Association. It contains illustrated biographical sketches of Dorothea Dix and Benjamin Rush, the latter by Dr. Joseph E. Raycroft, medical consultant, N. J. Dept. of Institutions and Agencies. There is also a valuable and somewhat detailed history of psychiatry in New Jersey from the pen of Commissioner William J. Ellis.

The Psychogram is one of the most venerable and outstanding mental hospital magazines, and represents the best type of occupational therapy as well as a particularly effective means of promoting hospital morale. It has been in continuous publication since July 1916.

On the inside front cover is a list of 133 employees of the hospital, including 20 medical officers, who are in the armed services.

Superintendent Marcus A. Curry and his staff are to be congratulated on the excellence of this special issue of *The Psychogram* which worthily contributes to the commemoration of the centenary of The American Psychiatric Association.

KARL BONHOEFFER.—"Prof. Bonhoeffer, who died last autumn at the age of 75, was for many years a leading figure in German psychiatry. From 1912 onwards he held the

professorial chair at Berlin University, and until his retirement a few years ago he was head of the neuropsychiatric clinic founded by Griesinger in the Charité Hospital. He began as a pupil of Wernicke, who in a brief comet-like career built a system of psychiatry on the basis of cerebral neurology. Bonhoeffer did not believe in systems, but like his teacher he remained a life-long advocate of the association of psychiatry and neurology. His first original work was a monograph on the mental state in delirium tremens —a classic of descriptive analysis. As psychiatrist to the Breslau prison he became interested in the psychology of petty criminals, tramps and prostitutes, thus opening a new field of studies on the social importance of borderline cases and psychopathic personalities. Best known among his many contributions to clinical psychiatry and neurology are his books on the psychoses accompanying infections and intoxications. He established what he called the exogenous reaction type as a clinical syndrome common to these psychoses, whatever the kind of infection or the toxic agent. He edited the psychiatric part of the German history of the last war, and himself wrote its most important chapters.

As editor of the *Monatsschrift für Psychiatrie und Neurologie* Bonhoeffer was well served by his critical mind, and even after the Nazis' arrival he tried to keep up the high standard of German psychiatry—but in vain. The *Monatsschrift* emigrated to Switzerland, and his attempts to protect his non-Aryan pupils from persecution miscarried. A refined and cultured personality, quiet and studious, he was a popular teacher and much in demand as a consultant."—*The Lancet*, April 29, 1944.

Ohio Commission of Mental Diseases. —Director Herbert R. Mooney of the Ohio State Department of Public Welfare announces that Dr. Frank F. Tallman, who has been Director of Mental Hygiene in the State of Michigan for the past two and one-half years, has resigned to accept the position of Commissioner of Mental Diseases in the Ohio Department of Public Welfare, Columbus,

There are fifteen hospitals for the mentally ill, feeble-minded and epileptic in the Division of Mental Diseases which Dr. Tallman will supervise, with a population of about 27,000 patients. In addition to his work with the hospitals, Dr. Tallman will be responsible for a receiving hospital program, and a statewide program of mental hygiene.

Dr. Tallman is a Fellow of The American Psychiatric Association and a Diplomate of the American Board of Psychiatry and Neurology.

Virginia Institute of Psychiatry.—A Psychiatric Institute in the State of Virginia connected with one of the medical schools was recommended in the report of the State Hospital Board to the Governor of Virginia in September 1943. Enabling legislation has been passed and approved by the Governor. It is anticipated that the necessary funds will be appropriated by the next legislature.

It is planned that this Psychiatric Institute with hospital accommodation for 100 or more patients, both white and colored, shall serve all the purposes for which similar institutions have been created in a number of the states, namely, treatment, prevention, research, and teaching. The Institute will include hospital wards, outpatient services and ample laboratory facilities in the several psychiatric fields. In this building would be situated the office of the State Hospital Board.

It will be contiguous to a medical college and general hospital and will provide for teaching psychiatry to both under-graduate medical students and graduate physicians. Here too could be trained the personnel of the state hospitals and young physicians expecting to enter the state hospital system. As part of a medical training center there would be available to the Institute the services of consultants and investigators in all medical fields, and the advantages would be reciprocal. Patients could be transferred from the state hospitals to the Institute for purposes of research, treatment and teaching as the State Hospital Board might direct.

The Institute would also cooperate with the State Board of Education in the examination and management of emotionally unstable children, with appropriate instruction to teachers and parents in child guidance procedures. With suitable instruction many teachers might be taught to recognize and

deal with problem children. In cooperation with the Departments of Health and Welfare, similar or related activities could be explored as possibilities.

FULL TIME DIRECTOR OF COMMUNITY PSYCHIATRIC CLINIC.—The Los Angeles Psychiatric Service, a member agency of the Los Angeles Council of Social Agencies, seeks to employ a psychiatrist with experience in diagnosis and therapy for adult outpatient cases. Applicants should have had some previous experience in coordinating and supervising a staff of psychiatric social workers, psychologists and volunteer psychiatrists. He should be able to supervise, organize and administer services and should be able to interpret the functions of the clinic to the community.

Salary: $7200.00 annually.

Please address all communications to: George N. Thompson, M. D., Chairman, Committee on Personnel, Los Angeles Psychiatric Service, 1200 N. State Street, Los Angeles 33, California.

ILLINOIS PSYCHIATRIC SOCIETY.—At the annual meeting of the Illinois Psychiatric Society held on May 6, 1944, the following officers were elected for the year 1944-45:

Dr. David Slight, President.
Dr. Joseph Luhan, Vice-President.
Dr. Frances Hannett, Secretary-Treasurer.
Dr. Clarence A. Neymann, Councilor.
Dr. Rudolph G. Novick, Councilor.

MEDICAL ETHICS IN PEACE AND WAR.—"The ethics of the medical profession in general is far and away higher and more ideal than the ethics of society as a whole. . . . . The profession is pledged to save life and to ease pain wherever this is possible, whether among friends or foes. . . . . Even in the midst of wars of the utmost destruction and even of wholesale extermination of armies, cities and nations, medicine has not heretofore been employed to destroy life but only to save it. . . . . Biology is the science of life rather than of death and medicine is by its very nature humanitarian rather than the opposite. . . . . Nowhere is the contrast greater between the humanitarianism of medicine and the inhumanity of war than in the medical and surgical treatment of wounded and helpless friends and foes. . . . .

"The world needs more statesmen and lawyers and educators and public leaders with the realism and idealism of scientific medicine. Too long have our social leaders treated the ills of society as savage medicine men, witch doctors, magicians, and plain fakers once treated the diseases of the body, trying to charm away the symptoms rather than to remove the causes of diseases. The disorders and diseases of society have natural causes and these causes must be controlled if social health is to be restored. Wars and social revolutions are man-made and they can be man-cured. May the spirit and methods of modern medicine guide our national leaders in treating this sickness of society, and may the humanitarian ethics of medicine grow and expand in all human relations!" [1]

CENTENARY VOLUME HONORED BY THE AMERICAN INSTITUTE OF GRAPHIC ARTS.—"One Hundred Years of American Psychiatry," the volume produced to commemorate the centenary of The American Psychiatric Association, has been chosen by the American Institute of Graphic Arts as one of its best selections for the month of July.

In his citation the judge, Dr. Robert L. Leslie, comments in the *Publisher's Weekly:*

> I have chosen this book because I feel that a great deal of thought, love and fine design have gone into the planning of this volume. It is a beautiful printing job, has an excellent choice of type face, and the illustrations all blend with the entire design. The binding is in excellent taste.
>
> (Melvin Loos designed the book and George Salter designed the backbone. The text was set in 11-point Linotype Baskerville on 14 with American Type Founder's Bulmer. The paper is Stevens-Nelson's Ragston, especially watermarked. The binding cloth is Bancroft's Natural Finish Sand and the backbone is Arreston C. The illustrations are sheet fed gravure done by the Photogravure and Color Co. The George Grady Press did the complete manufacturing.)

The contributions which make up the contents of the centenary volume speak for themselves. These the judge was not required to pass upon. It was altogether appropriate that the substance of the book should be given such admirable expression and such excellent outward form and it is gratifying to have the fact recognized by the judges of fine books.

[1] Professor Edwin G. Conklin, address at graduation exercises in medicine, University of Pennsylvania, Dec. 22, 1943.

CLINICAL PSYCHOLOGISTS IN THE ARMY.—The War Department announced on July 1, 1944 that clinical psychologists commissioned in the Adjutant General's Department are being made available for assignment to the Office of The Surgeon General for the neuropsychiatric sections of named and numbered general and station hospitals of 1,000 beds or more.

Clinical psychologists will be assigned to duty in the neuropsychiatric sections of the hospital to serve under the direction and supervision of the chief of the neuropsychiatric section. Their duties will be to—

a. Aid in the development and administration of the program of counseling designed to prepare convalescent patients for return to military service.

b. Assist in the preparation of clinical records, particularly including those requiring the use and interpretation of special psychological tests as desired by the chief of the neuropsychiatric section.

c. Assist in studies of special psychological problems related to the classification and retaining of neuropsychiatric casualties.

d. Assist in the determination of the appropriate military occupational specialty of men who are designated as ready for assignment, and to advise regarding their assignment to a specific duty or special training.

e. Perform such other professional and administrative duties in the hospital as will best assist the neuropsychiatrist in the accomplishment of the best management and disposition of patients.

OCCUPATIONAL THERAPY AIDES POSITIONS.—Occupational Therapy Aides are being recruited by the United States Civil Service Commission for work in the rehabilitation program in Army and Veterans' hospitals. The need for occupational therapists is becoming more critical as increasing numbers of war-wounded return to the hospitals.

In greatest demand are experienced graduates of accredited occupational therapy schools. Experience should be in hospitals acceptable to the American Medical Association. For some positions, however, college training in psychology and in arts and crafts or trades and industries, or experience as a junior aide in Veterans' hospitals, may be substituted for training in occupational therapy schools. Other positions will be filled by inexperienced graduates of occupational therapy schools.

The salary range of these positions is $1,970 to $2,433 a year, including overtime pay. Those appointed at $1,970 will be trainees for a period of 18 months; those appointed at $2,190 and $2,433 will administer occupational therapy under medical and general supervision, in Army and Veterans' hospitals.

There are no age limits and no written tests, but applicants must be physically capable of performing the duties involved. Persons now using their highest skills in war work should not apply. Federal appointments are made in accordance with War Manpower Commission policies and employment stabilization programs.

Further information on Occupational Therapy Aide positions and forms for applying can be obtained from first- and second-class post offices or from the United States Civil Service Commission, Washington 25, D. C.

EDUCATION.—"In regard to a re-evaluation of our philosophical concepts, there is the subject of education to which psychiatry cannot afford to be indifferent. The war ironically enough has served as a 'mirror held up to nature' wherein we have seen the weaknesses in our educational thinking in the past. The revelation that our young men in the induction tests showed a lamentable lack of educational discipline even in regard to elementary school subjects was no great surprise to the psychiatrist. For some time we have been viewing the end results of these educational experiments and we have contended that in the future the educational institution must revive those precepts of hard work and self-sacrificing endeavor for which there has never been a substitute in any process of learning.

"We have opposed that form of education called *progressive* because it has encouraged surface education, emotional irresponsibility, and an exaggerated emphasis on self-expression. And what to me personally is the 'most unkindest cut of all,' is the fact that this same progressive education has gone farther than any other in embracing the terminology of psychiatry itself. I find myself frequently on the point of wanting to insist that 'any resemblance between progressive education

and the profession of psychiatry is wholly unintentional and purely coincidental!'

"The trend, however, is away from progressive education and the war itself is giving the needed impetus toward the development of a sounder system of American education. Psychiatry will do well to encourage and abet that development.

"Surely the time has come when leaders in psychiatry and those in authority in psychiatric and educational institutions will realize that there are no sharp lines between teaching the sick and the well; that both the sick and the well should be exposed to the same types of training, to the degree that they can take it, and that education and re-education is a living, dynamic process which cannot be cut up into neat sections or parcelled out in varying-sized lumps.

"Our country is facing a future program of rehabilitation in which we must take on the responsibility of re-education and re-socializing millions of returning casualties who are mentally and physically sick from war's devastations. If we are wise, we will give up trying to label these men into shifting groups of the neurotic, the psychotic, the so-called normal. We will, instead, bring into our institutions and into our hospitals the revitalizing forces of vocational and avocational, social and recreational, and physical education and we will offer to all patients the content of this vast field of learning, only modifying our techniques to meet the abilities and needs of the individuals."—C. C. BURLINGAME, M. D., in the 120th annual report of the Institute of Living.

OCCUPATIONAL THERAPY IN THE SOUTHWEST PACIFIC.—In a letter to his friends from "Somewhere in the South Pacific" Major Merrill Moore referred to his favorite occupational therapy medium—conchology—and other therapeutic measures available in the pleasant land where he was stationed. Said he:

It has been possible for me to learn more about sea shells at their source. The shells here are unusually fine. I have had the good fortune to meet a world authority on sea shells who is also curator of the local museum. He lets me bring my patients in large groups to the museum, and I take them also to the zoo regularly as part of treatment. I also take them swimming and to the beach. The patients enjoy this, and I think it does them good for a change. I am using occupational therapy for the patients in the hospital in the mornings (basket work, leather work, shell work and other crafts) and trips and various diversions in the afternoons for patients who are able to go out.

The men have all sorts of wholesome recreation and plenty of it—swimming, sailing, fishing, hunting (deer and wild pig) and just about everything else when they are on liberty or on leave. The deer are red deer and were imported many years ago from Japan. They grow bigger here, however, than they did in Japan. The pigs are just plain wild pigs. Horse racing is very popular. Everywhere the people are genuinely friendly and make the soldiers feel at home, and most of the men appreciate this and take advantage of the unique opportunities for rest and recreation this country affords. In fact, many of the men are learning things that may be valuable to them after the war; I know I am.

MEDICAL CORRECTIONAL ASSOCIATION.—This Association, an affiliate of the American Prison Association, is an organization of persons interested in the medical and psychological approaches to crime. Its membership includes physicians who recognize the uniqueness of institutional practice and wish to exchange ideas regarding their work; psychiatrists and psychologists who find in prisons a challenging field for research and study; social workers who appreciate the significance of the modern orientation in criminology; probation, parole and administrative personnel who feel the need for contact with those concerned with all phases of the work.

Meetings of the Medical Correctional Association are held concurrently with the conventions of the parent body; and always include at least one independent session devoted solely to the exchange of ideas and reports of research in this field. Abstracts of papers and discussions presented at such meetings are subsequently circulated among the membership for permanent reference.

The Medical Correctional Association is now engaged in a drive to increase its membership. Interested persons are urged to communicate with the undersigned for further information. Dues are $1.00 per year, entitling the payee to voting privileges, all communications and literature.

ROBERT M. LINDNER,
Secretary-Treasurer,
Medical Correctional Association,
Lewisburg, Pa.

BOOK REVIEWS

PSYCHIATRY IN WAR. By *Emilio Mira.* (New York: W. W. Norton & Company, 1943.)

This volume covers the Salmon Lectures for 1942. The author was professor of psychiatry at the University of Barcelona and during the Spanish civil war was psychiatrist-in-chief to the Spanish Republican Army. His information, therefore, is of first-hand origin, and one sympathizes with the note of regret in his quite superfluous apology for lack of concrete data that could be supplied only in "the quiet room of his lost library."

He believes that the social possibilities of psychiatry have not yet been realized and that it deserves a prominent rôle in present day warfare. The function of psychiatrists in war has never been fully appreciated. The average man may be normal, as military leaders believe, but he must behave abnormally in order to fight fiercely, so the task of the psychiatrist increases during war. Team work with psychologists is necessary, but the psychiatrist is far better equipped to establish resistance to stress.

From this starting point, the book proceeds with a presentation of the relation of the psychiatrist to war; of fear and anger, the two driving forces with which the psychiatrist must deal; of the place of psychiatry in the German army and in the Spanish army. Specific disorders are taken up, and recovery, morale, mental hygiene, and a psychological test developed to throw light on temperament and character.

In war, says Mira, people must learn again how to live, and why. They look for a better human state and want to know not merely what they are fighting against but what they are fighting for. The average citizen loses his spontaneous affability and sometimes reacts harshly; he is troubled by this change and falls into a state of nervousness. Soldiers must obtain complete mastery over their basic emotions and must be ready to obey blindly the most unusual orders. They must judge people by their appearance (*i.e.*, uniform) rather than their worth. An enormous amount of information about the war must be supplied and discussions of war philosophy stimulated, for after several years of war, people become tired, disinterested and depressed. There are reassuring factors such as visible support, hope, protection, knowledge of how danger may come, object and confidence.

The psychiatrist's duties are adjustment of the population to the war effort, mental prophylaxis for mental and civil population, proper care for individuals and groups who become mentally ill or exhausted, continuous readjustment of convalescents and maintenance of high morale. Work in mental hygiene must be increased in war conditions. There is not enough of it even during peace. In war the suggestibility of the majority is increased; hence contagion is possible. There is danger not only of an increase in individual mental disorders but also of the emergence of collective mental disorders. To prevent them is the task of the psychiatrist.

The author analyzes the stages of fear, from prudence to terror. Fear makes an appearance in everyone. It is engendered by lack of suitable reaction. The unforeseen is more dreadful than the certain and immediate. More depends on what the subject thinks about the situation than on the objective peril; we are more frightened by our imaginations than by our perception of danger. The spread of fear is favored by exhaustion, lack of leadership, excess of sensory stimulation, unpredictability, belief in encirclement, mystery and lack of plan for action.

There is no definite relation between peculiarity of physical construction and the degree of fearlessness. The author differs somewhat from Cannon's categories, asserting that pure results cannot be obtained in dogs and cats.

There are rules for preventing the loss of control over fear. One of these is that those who become too fearful shall have freedom to unburden their feelings without suspicion of cowardice or treason. To effect this, a trained technician should be provided for every military group. Part of the psychotherapy of fear is reassurance as to the subject's own value and potentialities. These should be dealt with in a personal and dynamic manner.

Fear and rage may be blended and certain characteristics determine the relative proportion of each. Rage if rightly directed is useful in war. On the other hand, retaliation leads to anarchic behavior, except in isolated cases of intelligent people, such as spies and guerillas, who are prepared for every sacrifice. Envy, jealousy, resentment and persecutory delusions call for psychotherapeutic lectures and informal talks.

Germany and the U.S.S.R. made very similar changes in their armies from one war to the other. They combine military discipline with political stimulation. Officers live close to the men. In Germany careful selection is made of both soldiers and leaders. They seek devoted soldiers, resourceful and decisive leaders. Choice is not on academic principles but use is made of scientific knowledge. Training starts when the German boy enters primary school and he becomes a master of meekness and endurance. Even his Sunday walk develops strategic knowledge. History is distorted for him. In the choice of an officer, data are collected on his biography, his expression, psychological tests and efficiency. Even graphology is employed. Then comes a final two-day test of leadership. Thus a disorderly gathering of information is followed by systemization into a characterological result.

Psychiatry in the Spanish Republican Army was favorably set up with central control. Men were rated capable of no service, of full service or of auxiliary service. Testing of recruits saved breakdowns. The psychologist chose the soldier's occupation, the psychiatrist his assignment. The military physician should be the primitive mother. In war people who are different must live and work together, so their program should be varied as much as possible. Amusements, contests, artistic performances, lectures were used in Spain to regulate the soldiers' lives. Frequent contact with those for whom the soldiers cared was maintained by letters, pictures and radio. Good literature was useful, conferences and informal meetings, good fellowship. A book on mental hygiene was formulated. Discussions were beneficial. Complaint boxes had little value. Recovery and readjustment kept soldiers in the army. They responded to good personnel work. There could be psychotherapy for alcoholics in the army. There should be retraining centers. Results of psychiatric service are good in the army, and better than in the civil population. The prospect of restoration may be better in the army, depending on the nature of the illness. The rehabilitation of all kinds of invalids requires psychiatric assistance.

Appendices explain some psychological tests made with rather simple apparatus. One is called an axistereometer. What is named myokinetic psychodiagnosis is accomplished by simple appearing tests of lineal movement in the three fundamental directions.

In addition to other virtues, the book is readable and not too long. The bibliography includes many American psychiatrists. There is a workable index.

S. W. H.

HUMAN GASTRIC FUNCTION. An Experimental Study of a Man and His Stomach. By *Stewart Wolf, M.D., and Harold G. Wolff, M.D.* (New York: Oxford University Press, 1943.)

This book records the results of prolonged observation of a man on whom a gastrostomy had to be performed in childhood. The studies were begun when the patient was 57 years of age.

The value of the physiological experiments undertaken is sufficiently attested by a foreword to the book written by Professor W. B. Cannon.

Neurologists and psychiatrists will be particularly interested in the large section of the book which deals with changes in the patient's gastric function as direct results of varying emotional states. The authors show that fear and depression, as would be expected, cause pallor of the gastric mucosa with diminution of mobility and secretion of the stomach. A sense of "well-being" in the patient was accompanied by a moderate increase of vascularity, mobility and secretion of his stomach over its normal "resting" state. States of resentment, hostility and anxiety produced well-marked hyperæmia, hypermobility and hypersecretion of the stomach. The hyperæmia seen under these emotional conditions was frequently severe enough to produce submucosal gastric hæmorrhages and to complete a picture of "hypertrophic gastritis." The authors emphasize the importance of the gastric secretion of mucus in preventing ulceration of the hyperæmic mucosa.

ERIC A. LINELL, M. D.,
University of Toronto.

1. THE HISTORICAL DEVELOPMENT OF RECOVERY'S SELF-HELP PROJECT.
2. GROUP PSYCHOTHERAPY.
3. LECTURES TO RELATIVES OF FORMER PATIENTS. By *Abraham A. Low, M.D.* (Chicago; Recovery, Inc., 1140 North La Salle St., 1943.)

These small paper-covered brochures are listed as Volumes 1, 2 and 3 respectively of the publications of Recovery, Incorporated, the Association of Former Mental Patients. They constitute a trilogy and are sold only as a complete set.

A short preface to each volume relates that a group of thirty recovered ex-patients of the Cook County Psychiatric Institute founded this Association on November 7, 1937, after receiving shock treatment. It further states that the aim of the Association is to emancipate the ex-patients and their relatives from the effects of the *stigma* attached to mental disease.

Volume 1 tells of the growth and development of this Association through quotations from articles and news notes as they were published in the bimonthly journal of the Association, *Lost and Found*. Organized and sponsored by Dr. Abraham Low, who lists himself on the cover and title page of each volume as Founder and President of Recovery, Inc., the Association held regular meetings, some of them public; members spoke on the air and at luncheon clubs; it participated with others in framing a new commitment law which passed the state legislature but was vetoed by the Governor; it found employment for its members; it formed clubs within itself for social and cultural purposes; it had committees for various divisions of their activities. Disappointed because of the failure of state and national psychiatric associations to give public approval to this project and his group psychotherapeutic techniques, Dr. Low decided to resign the presidency and to liquidate the Association in 1942, which he did in spite of the protests of the ex-patients. In his own words—"the author was adamant and refused to reconsider his decision. Recovery was liquidated. The members were stunned . . . ."

Volume 2 consists entirely of stenographic reports of group psychotherapeutic interviews. The patients were apparently all recovered or greatly improved following shock therapy and these interviews aimed at the prevention of relapses. Interviews are reported with a number of different patients, who had presented varying symptom complexes during the acute phase of their mental illness. These were reviewed and discussed in the group, other patients participating and explanations and reassurances were offered by Dr. Low.

Some of these were very superficial and many psychiatrists would doubt the value of telling a patient that if hallucinations recurred he should not put the same interpretation on them as he did during his former illness. In interview eight for example, Betty says, "what you mean by victories and symbols is beyond me." While perhaps carping at trifles, this reviewer cannot resist the criticism that every patient spoken of or taking part in these interviews is invariably called by his or her given name, irrespective of age or sex. It is curious that Dr. Low falls so readily into this form of mental hospital stigma. Any other woman might be Mrs. Jones or Miss Smith but after a mental illness she becomes Betty, Ruth or Frances.

Volume 3 comprises 15 addresses given by Dr. Low to groups of relatives of these patients. They are aimed at giving the relatives a better understanding of the family factors in the cause of psychoses. Undoubtedly before a patient goes home from mental hospital the relatives should be instructed in the factors which endanger the patient's mental health and should also be told what they can do to help preserve the patient's mental stability. Some of us would prefer to put this on an individual discussion basis and to utilize the services of social workers, supplemented by general information in letter or pamphlet form.

The experiment described by Dr. Low undoubtedly has virtue and whatever solid values it has will in time become apparent to others, who may be expected to imitate or improve on the techniques here described. The welfare of the mentally sick and the preservation of mental health are the major interest of psychiatrists. The field of experimental psychotherapy has rich possibilities. These three booklets present one such experiment. Dr. Low should be encouraged to continue this work. The Curies were not easily discouraged.

G. H. Stevenson, M. D.,
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London, Ont.

Managing Your Mind. By *S. H. Kraines, M. D., and E. S. Thetford.* (New York: The Macmillan Company, 1943.)

This volume has been prepared to afford the intelligent layman a working understanding of psychological and emotional mechanisms and their management. This objective, to be sure, has been attempted frequently in recent years but on the whole with rather indifferent success. The present treatment, however, constitutes a really gratifying exception. Simply and clearly written and formulated along sound psychobiologic lines, it does achieve its purpose in commendable degree. The nature of personality and its principal pathological possibilities are well and understandably described. Especially effective and useful are the discussions on the relationship of psychodynamic aspects to somatic symptoms and actual disease. Deserving of comment, too, are the chapters on "Tension," "Psychological Mechanisms," and "Symbolic Symptoms."

While of course not a substitute for adequate personal psychiatric contact, this book should be of real value for the orientation of intelligent lay readers. Also, in the opinion of the reviewer its perusal would definitely profit the practising physician and, from the standpoint of general formulation, even the psychiatrist himself.

T. R.

Sulfonamides. By *Colin M. MacLeod, Paul H. Bell, Henry Irving Kohn, J. S. Lockwood, Richard O. Roblin, Jr., James A. Shannon, and H. B. van Dyke.* (Annals of the New York Academy of Sciences, Vol. XLIV, Art. 5.) (New York: New York Academy of Sciences, 1943.)

This series of five papers is the result of a conference on the subject held by the section on physics and chemistry of the New York Academy of Sciences in April 1943. The first paper discusses the chemical structure of the sulfonamides in relationship to their activity as chemotherapeutic agents and is highly technical. The second describes some animal studies on the distribution and excretion of many derivatives of sulfanilamide in the body as a whole, in specific organs and the facility with which each passes the blood-brain barrier. The third paper discusses the toxic action of the substances, which should be thoroughly digested by every practising physician. The fourth paper concerns the present knowledge of the antagonists and dynamists of the sulfonamides with a review of the literature on the subject. The last paper by Lockwood, a clinician, attempts and succeeds very well in linking up the implications of the preceding papers with the therapeutics of the drug. He clarifies their biological action and shows how new light and a clearer approach to the subtle mechanisms of cell growth and tissue immunity and the chemistry of inflammation have been obtained by the development of these drugs.

Trevor Owen, M. B.,
University of Toronto.

Clinching the Victory. By *Eldon Griffin.* (Seattle: Wilberlilla Publishers, 1943.)

"Clinching the Victory" is a 365 page pocket-sized book whose unique photo-lithographic format and rainbow flag-emblazoned cover may, like its contents, arouse in the reader instincts of conservative skepticism while they intrigue his liberal yearnings.

The author claims a background of "residence in the Southern Middle West, New England, California, the Pacific Northwest, and Japan, as well as travel in Canada, ... Alaska, Korea, Manchuria, China, and the Philippines," occupational experience in the oyster industry, contact with the lumber industry, investigation of fisheries, "and several years of teaching and educational writing, chiefly in universities of the Northwest."

The book is earnest, well-reasoned propaganda for lasting peace based on the essential brotherhood

of man. Life is depicted as a constant struggle, and we are urged to prepare now for "the postwar phase of the conflict" rather than a return to normalcy when military victory has been won. Although the author characterizes his work as "a scouting book" and says that "it is not important that any single proposal should survive criticism" he adds that "it is very important that the process of criticism and constructive thinking should be based on definite statements." He then offers blueprints for a supranational government complete with executive, legislative, and judicial branches, police force, regional organizations, anthem and flag.

The author repudiates the idea of a traditional peace conference and says ". . . . we must make all postwar negotiations the commencement of the structural and functional evolution of a democratic international system. . . . . Whatever (peace conferences) are called they should be arranged with permanence of function as their keynote." He sees an international police force as "the natural successor of present fighting forces" but also as "a training ground for selected international employees." "Small groups of promising members should be detached for intensive education in a new supranational academy."

It is suggested that the supranational legislative body be composed of "not only popularly chosen representatives from individual countries . . . . but also a few representatives selected directly by . . . . regional associations or commissions," and a limited number of members appointed by the national executive perhaps from "nominations by professional and scholarly associations of high standing." "Use of multiple principles of selection in a single legislative body, reflecting the multiple political, geographical, occupational, cultural, and community interests . . . . seems preferable to the alleged advantages of a strictly geographical legislature of the . . . . bicameral type." Also recommended is a "psychological section devoted to the task of facilitating the legislative, judicial, executive, and administrative operations of the official bodies and their employees" and reference is made to recent instances of "the unadjusted leading the unadjusted" and to the "adolescent temper tantrums" of "certain well known public officials."

In discussing "domestic changes" and "conflict of new plans with custom" the author stresses the need for self discipline and notes that "we are adolescent in our thinking on world affairs and require rapid maturing." Among other specific suggestions he recommends that "apart from authorized services, all persons in Axis and United Nations countries should be required to turn in their implements of violence . . . . ," and adds, "This will mean sacrifice of a traditional privilege (as in the case of hunters) which to most minds is not an international menace."

The long chapter on attitudes and plans mentions present spheres of international cooperation such as scientific research and suggests that the "effective dreamer" incorporates "present treasures" into "a more inclusive pattern." He does not suppose "that general supranational government will speedily settle all, or most, of the pressing problems before us."

In postwar treatment of defeated peoples "restitution" is advocated rather than "retribution." "The world will belong to (the people of the Axis nations) as well as to us; a common allegiance to the general good now seems a practical possibility. . . . ."

One can heartily endorse the plea for education in mutual understanding of peoples and agree that, "The achievement of something approaching security will come only as a new generation . . . . is gradually given an outlook different from the thinking of a number of influential leaders and the attitudes of many parents."

As to the cost it is said that "unless Peace is to be a mere breathing spell before we continue the War it too will be expensive." "When people are adrift in a flimsy or overloaded boat the rich man may have to jettison some of his possessions . . . . in order to survive. . . . . If the present . . . . crisis runs our national debt to many hundreds of billions we may have to apply the analogy, thinking only in terms of capacity to produce and to protect." The tremendous debt "will not be paid off simply in the impersonal terms of money. . . . ." "Indemnities, payment of all war debts," and "high special interest tariffs" are listed as "luxuries which can no longer be afforded in a supranational world."

"Among the overgrown 'isms' which have mushroomed in our midst, individualism is one which requires particularly careful scrutiny, because it contains so much that is fundamentally good. . . . . Without the control of social knowledge and conscience individualism in a gregarious world is a danger which points to anarchy. . . . ."

It is unfortunate that the involved literary style and unclear print discourage the reading of so valuable a contribution to social thinking.

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PSYCHOLOGY AND THE NURSE. By *Frank J. O'Hara, C. S. C., Ph. D.* Second edition. (Philadelphia and London: W. B. Saunders Company, 1943.)

The concept of the patient as an individual requires that the nurse of today have a better understanding both of her patients and of herself than heretofore. "Psychology and the Nurse" presents a series of steps by which the nurse may acquire such knowledge, and be able to integrate it into her activities day by day.

After an introduction as to the nature and definition of psychology, the author gives the organic basis of his discussion with an illustrated description of the anatomy and physiology of the nervous system. Out of this, he develops in logical sequence the conscious activities of mind and gradually builds to the importance of the unconscious as represented by imagination and dreams. Father O'Hara has the gift of depicting the com-

plex in simple language easily understood. This is especially valuable to the young nurse who is devoting her time and attention to many phases of learning, all of which are important. To this end, the chapters on "The Art of Thinking" and "The Laws of Learning" contribute immeasurably.

The title of "Psychology and the Nurse" tends to limit the usefulness of this text to nurses, but the style and content make it equally applicable to other students; in fact, it should be of interest to the general reading public.

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PAPERS FROM THE SECOND AMERICAN CONGRESS ON GENERAL SEMANTICS. Compiled and edited by *M. Kendig*. (Chicago, Ill.: Institute of General Semantics, 1943.)

This volume of nearly 600 pages is composed of approximately 80 papers read at the Second American Congress of General Semantics held at the University of Denver in August, 1941. Most of the papers report the application of general semantics as formulated by Alfred Korzybski to various fields of endeavor and to the solution of human problems. The material spreads over an impressive range. The reader unfamiliar with general semantics may wonder on opening the volume at such titles as "Ethics of Time Binding" by S. I. Hayakawa, "Semantogenesis and Dental Caries" by Louis G. Barrett, "Verbalizations in Finance" by Luther Whiteman, "Personal Applications of General Semantics in the Motion Picture Business" by Robert Lord, "Elementalism: The Effect of an Implicit Postulate of Identity on I. A. Richards' Theory of Poetic Values" by John Gordon Spaulding. Such a diversity of subjects, he may feel, can scarcely have enough in common to relate them and he may assume, if the terminology of general semantics is new to him, that the questions at stake are highly abstract and the approach to them impracticably "philosophical."

The inexperienced reader will, however, if he gives careful consideration to these papers, be likely to realize soon that the methods of general semantics are anything but arm chair philosophizing or a playing with words at a mere level of theory. Professional philosophers and others given to the study and expounding of fundamental causes, reasons and goals have often in the past been accused of carrying out their activities in a medium at best far from identical with, and often little related to, actual human experience. Though general semantics can certainly be said to deal with fundamental matters, it would indeed be difficult in any fairness to bring against it the above accusation. In fact, as many of the papers in this volume demonstrate, one of the chief aims in adopting a non-Aristotelian viewpoint is to bring the consideration of fundamental problems into relation with our actual neural functioning as healthy organisms, into direct relation with general human experience. The aim, to consider it from a slightly different aspect, is to free our neural functioning, our behaviour, symbolic and overt, from the false assumptions which, implicit in the primary logic and linguistics of our culture, are built into our human functioning by our education, considered in the broadest and deepest sense.

Korzybski is convinced that the Aristotelian system, to a considerable degree, still constitutes the framework, not only of philosophical, religious and scientific activities, but even of our language itself and our habitual reactions in everyday matters. He has pointed out convincingly a number of assumptions in this system which, however valid at verbal levels of abstraction, have no existence in our experience and consequently create an untrue, literally a delusional, impression of the world in which we live and of our relations with it. So long as we examine and question the matter only by the criteria of the Aristotelian system, so long as we are confined in our judgments by this system, it is impossible for us to realize its falsifications and the source of our errors. Until we get outside of the system we are no more capable of insight into its imperfections than a theologian who proves by the Bible a dogma he has extracted from the Bible.

This is scarcely the place to elaborate on, or even to summarize, the assumptions that Korzybski challenges in the Aristotelian system as unreal and serious. Among these it is perhaps worthwhile, however, to mention briefly the two-valued logic, the demand for an *either-or* choice which is consistent with our verbal abstractions but not regularly with the world of common sense, much less with the universe of modern physics, with a process-concept as contrasted with the archaic static-concept. The "is" of identity which we often refuse to accept consciously when its literal implications are pointed out to us, according to general semantics, influences us nevertheless and enters, without our recognition, continually into our judgments and emotional reactions, making us behave in a manner suggestive of patients influenced by delusions. The "is" of identity, the advocates of our subject maintain, promotes identification and causes the person so influenced to behave towards $woman_2$ as if she were $woman_1$, or towards Jew_{26} as if he were Jew_7, without being aware of why he does so. The elementalistic terms which the non-Aristotelian system rejects have long made trouble for psychiatrists. The contrast of "mental" with "physical," of "thinking" with "feeling," of "nervous breakdown" with "mental disorder" is proper in the language not only of laymen but of many physicians. One can, in fact, scarcely speak otherwise without laborious circumlocutions. Few clinicians of today, however, who deal seriously with personality disorders are likely to agree that such terms actually contrast anything in nature. When one speaks of an *unconscious wish* he speaks literal nonsense, and many psychiatrists have been accused of folly for so speaking. The ordinary terms of our language contain assumptions that make it all but impossible to state what becomes obvious in clinical experience.

Such erroneous assumptions working daily and hourly in our attempts to evaluate our experience, to behave adequately and sanely towards our environment, tend to develop prejudice that is scarcely distinguishable from delusion, to promote frustration and evasion. Since. the world of experience does not respond properly when we try to deal with it by our set of directions, some of us give up the game and withdraw, totally or in part, to another sort of activity, to the process of playing where things really work to suit, to manipulating verbal abstractions. Not only the paranoiac and the *Bund-führer* but sometimes the Fourth of July orator and the apocalyptic revivalist furnish examples of this migration into levels where words have ceased to have relation with experiences.

The volume now under discussion offers many examples of Korzybski's methods applied to diverse fields of work: to literary criticism, to mental hygiene, to business, to the correction of reading and speech difficulties, to teaching in schools and colleges, to journalism, to psychopathology and to psychotherapy. The volume is not particularly suitable for the beginner who is primarily concerned with learning the principles of general semantics, though it is likely to stimulate such an interest. The reviewer would suggest that those unfamiliar with Korzybski's "Science and Sanity" first acquaint themselves with that volume or, if their intentions are not sufficiently serious for this effort, with Hayakawa's "Language in Action." The reviewer is genuinely impressed with the formulations and methods of general semantics and would not be surprised to see them take a major rôle in the development of psychiatry. The present volume is highly recommended as useful material on a subject of the first importance.

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Fundamentals of Psychiatry. By *Edward A. Strecker, M. D., Sc. D., F. A. C. P.* Second edition. (Philadelphia, London, Montreal: J. B. Lippincott Co., 1944.)

This little volume of 200 pages might be called psychiatry in a nut-shell. It is designed to meet the needs of a stressful period when psychiatric information is in urgent demand in both military and civilian life and when time is at a premium.

The extremely difficult task of presenting contemporary psychiatry in so small compass, the author has accomplished surprisingly well. After all he modestly indicates the scope restricted to the "Fundamentals." But these fundamentals are clearly and reasonably fully presented. Then too the circumstance is not to be overlooked that a small book may enjoy the advantage over a voluminous tome that it has fewer pages in which to say things that aren't so—a weighty consideration in psychiatric literature. The data in the present work have been selected skilfully and scrupulously.

The plan of the book conforms to that of most of the standard texts on the subject. The author makes brief comments on the development of psychiatric concepts and the position of psychiatry amongst the medical disciplines; discusses the better known facts of etiology, especially the emotional factors, methods of classification of mental disorders and an outline for the examination of patients. After sketching the various disability categories he devotes a section to the psychiatric implications of war for soldier and civilian, and the management and treatment of military neuropsychiatric disabilities.

This second edition (the first appeared in 1942) contains a new section on war neuroses, this being a lecture the author gave last autumn at a meeting of the Association of Military Surgeons.

The final chapter is a helpful guide for the nurse in dealing with psychiatric patients.

There are diagrams throughout the text intended to illustrate mental states or reactions. The helpfulness of such diagrams may be questioned because of the obvious impossibility of making graphic symbols correspond in any way with psychic happenings. To represent these happenings verbally, even with the richest vocabulary, is a precarious undertaking and often impossible; but to try to make pictures of them . . . . ! However, on this point opinions may differ.

The book makes accessible the basic facts in very acceptable form, controversial issues are avoided, and the busy physician, military or civilian, is provided with an authoritative guide to the psychiatric problems of every day.

C. B. F.

IN MEMORIAM

CHARLES WALTS BURR

1861-1944

On February 19, 1944, Charles Walts Burr passed away in his apartment at The Drake Hotel in Philadelphia. His death had been expected by reason of the known nature of his illness, but to his host of friends and associates it occasioned great sorrow. His had been a most versatile personality. He was a man of medicine, of science and of letters. He was more than a physician; he was a teacher, an investigator and an author of no mean caliber. He belonged to that generation of nationally known Philadelphia neuropsychiatrists who added lustre to their specialty for many years and he was the last survivor of the Dercum, Mills, Lloyd and Spiller group. It has been said of him that he did not know how to play; but no one had any doubt that he knew how to think and work. In my many years' acquaintance with him I am certain that he never took a vacation of more than a few days at a time, and aside from his studies in Europe immediately following graduation from the medical school of the University of Pennsylvania, he had never traveled extensively. His entire life was devoted to a continual search for knowledge, not only in medicine but in many other fields. Dr. Burr never married, principally because such a course would have militated against his main objective—the unimpeded pursuit of knowledge. It may indeed be said that he was married to his art.

He was a firm believer in the importance of heredity in the predisposition to disease, and this was emphasized in one of his most interesting monographs entitled, "What is a Good Environment?" He also was a proponent of the organic cause of mental and nervous disorders and was opposed to the more radical phases of the doctrines of psychoanalysis. He prophesied the ascendency of chemotherapy as has recently come to pass through the miracles of penicillin and the "sulfa" drugs.

Dr. Burr had frequently stated to me that his life had been uneventful,—no tragedy, but quite a little comedy in the classical meaning of the word, had come into it. He stated that his ancestors were unimportant, simple, thrifty and a God-fearing, honest people. On his father's side they were English Quakers who had settled in New Jersey before the Revolution. His mother's people were Irish Presbyterians named Walts. Aaron Burr was not of Dr. Burr's kin. Charles W. Burr was born in Philadelphia November 16, 1861, and was the youngest of four children, all sons.

There was a general opinion among those who knew him that he adhered to no religious belief, and by some he was even considered as an atheist. Dr. Burr was a profound believer in an Omnipotent Being, but he adhered to no special religious tenets, and he had no time for the bickerings and theological squabblings that in his personal experience and reading had demonstrated to him the frailty of religious dogma. This attitude had its origin in an episode of his early life, due primarily to a difference in the religious beliefs of his parents. Up to ten years of age he had gone regularly to Sunday school at the Arch Street Presbyterian Church. One Sunday his regular Sunday school teacher was ill and his place was taken by an unwise young student of theology who preached a sermon to the young class on the necessity of baptism in order to obtain salvation. This preacher stated that the unbaptised would be "damned." At this juncture the young Charles Burr arose in his wrath and remarked: "That is a lie; my father is a Quaker; he has never been baptised, but he will go to heaven as soon as he dies." Whereupon he left the church, and from that day never entered another church nor evinced any interest in sectarian religious belief. The incident was an excellent example of how a

DR. CHARLES WALTS BURR

childhood impression could and did influence the conduct and belief of a person throughout his lifetime.

Dr. Burr was a graduate of the University of Pennsylvania, in arts in 1883 and medicine in 1886. He was a college honor graduate and was elected "spoon man" of his class. Shortly after graduation he joined the staff of the Philadelphia General Hospital and became assistant to Dr. S. Weir Mitchell. He was also associated with Dr. Wharton Sinkler and Dr. William Osler at the Orthopædic Hospital, and a little later he studied neurology and psychiatry abroad for two years; and shortly after his return to Philadelphia he became a teacher at Medico-Chi Hospital and College, and eventually professor of neurology at that institution. In 1901 he accepted the chair of psychiatry at the University of Pennsylvania undergraduate school of medicine, which chair he occupied for 30 years, being retired "on age" in 1930. He was consultant in neuropsychiatry to many hospitals in and about Philadelphia; and during the first World War was psychiatric consultant to the Surgeon General of the U. S. A. Dr. Burr was recognized as one of the great leaders in American neuropsychiatry, and in 1908 he was elected president of the American Neurological Association. He also had been president of the Philadelphia Neurological Society, and of the Pathological Society in 1898.

During his life he had collected a large library of scientific books, and in 1929 he presented 19,000 volumes to the University of Pennsylvania.

At about that time he was made president of the board of trustees of the Episcopal Academy and in 1933 was awarded the degree of "Doctor of Science" by the University of Pennsylvania and was appointed to their board of trustees. He was also a recipient of the Strittmatter Medal "for meritorious achievements in the field of medicine" in Philadelphia.

In 1915 Dr. Burr edited and contributed a chapter to "The Textbook on Nervous Diseases" by Hans Curschmann. As an avocation, Dr. Burr was interested in the psychopathology of "Genius" and a large section of his library dealt with men and women of exceptional ability. He disapproved very strongly of "mass education," believing that nature did not intend all human beings to have a so-called "higher education;" and his thoughts were expressed in many monographs, one of which was the widely discussed "Broken Minds of Youth."

Dr. Burr was interested in many things other than medicine. He was an active worker in, and at one time president of, The Dickens Fellowship of Philadelphia; the Philosophical Society; and the Franklin Inn Club. In 1926 he was elected president of the National Eugenics Research Society, and his presidential address was entitled, "The Evils of Standardized Education." He also was president of the Numismatic and Antiquarian Society of Philadelphia, and of the Medical Club. One of his chief joys was in attending the meetings of the Philobiblon Club. He was instrumental in organizing at the University of Pennsylvania the society known as "The Friends of the Library," the purpose of which was to foster interest in and obtain funds for that library. For many years he had been Honorary Librarian for the College of Physicians of Philadelphia.

During his lifetime, Dr. Burr amassed a considerable fortune both in money and in a remarkable library of manuscripts, rare papers and rare books. He was keenly interested in young men who showed promise of special intellectual ability, and in many instances he subsidized the further education of such youths who were financially handicapped. This occurred frequently with students at the University of Pennsylvania, his internes in hospitals and at other institutions in the vicinity of Philadelphia. Dr. Burr might have been likened to "Mr. Chips" in that he had made himself a father to many sons in guiding their youthful footsteps and mental leanings, despite the celibacy of his own life.

Dr. Burr was peculiarly alone during the last 20 years of his life. He had absolutely no direct or even collateral relatives. None of his brothers had married and he was the last survivor of a really brilliant family line.

Dr. Burr took keen delight in studying and analyzing the mental processes of great authors and personalities in history. His monographs on "Galen," "Jean Paul Marat," "Robert Whytt," "Dr. James and his Medi-

cal Dictionary," "Jerome Cardan as Seen by an Alienist," are a few of his writings of this nature which had intrigued many audiences at various medical meetings.

In the words of John Dryden, Dr. Burr's philosophy of learning could have been summarized as—

"Errours like straws upon the surface flow
He who would reach for pearls
Must dive below"

He did indeed search "below the surface" for the answer to the riddles of life. Opinions will vary as to whether his was a complete and well-rounded existence, but there is no doubt the world is a better and more enlightened place in which to live because of the achievements and teachings of Charles Walts Burr.

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